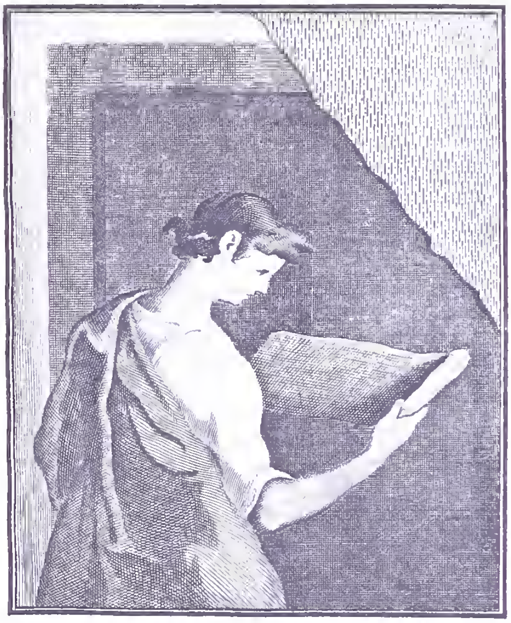

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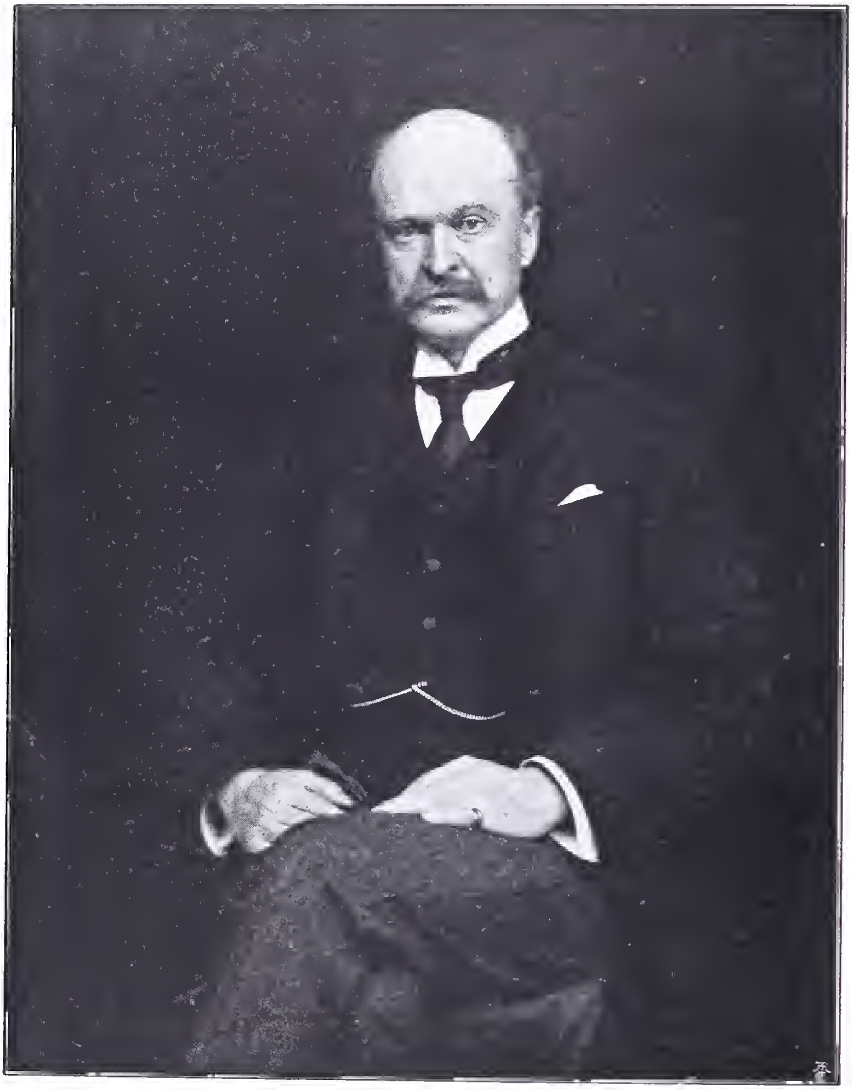

Charles F. McKim

CHARLES FOLLEN McKIM,

President of the American Institute of Architects.

ROYAL GOLD MEDALLIST 1903.

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TOTAL: VOLUMES, 55.

JOURNAL

OF

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

69

SESSION 1902–1903.

THE OPENING ADDRESS. Delivered by the President, Mr. Aston Webb, A.R.A., F.S.A., at the First General Meeting, Monday, 3rd November 1902.

Colleagues, Ladies, and Gentlemen,—

SINCE our last meeting in this room two events of national importance have taken place: the dangerous illness and marvellous recovery of our Sovereign the King; and the Coronation of the King and Queen in Westminster Abbey on 9th August—an event attended by all the splendour of the ancient rites and ceremonies which tradition has handed down to us as fitting for such an occasion; and it seems but right that the first words of the President of this Royal Institute should be to express on behalf of its members their thankfulness for this happy consummation of their hopes and aspirations.

My next words must be to thank you for the honour you have done me in placing me in this Chair; an honour which carries with it many responsibilities, which I shall do my best to fulfil; but whether I succeed or not, I will ask you to believe that I am actuated solely by what I consider to be the best interests of architecture, and of this Institute in which I have always been a firm believer.

I am aware that my task is not made the easier by the admirable manner in which these duties were performed by my friend and immediate predecessor, Sir William Emerson; and I am glad to take this opportunity of publicly congratulating him, on behalf of the members of this Institute and myself, on the high honour of knighthood conferred upon him by his Sovereign; an honour which has given much pleasure and satisfaction to all of us, the more so that it is, I believe, the first time that a President of this Institute has been so honoured.

It is now my duty as your President to notice, as concisely as I can, some of the questions on the art and practice of architecture and the affairs of this Institute which present themselves to us at the present time, and in doing so I will ask you to understand that I in no way lay claim to any special fitness for this task, but that it is merely through the fact of my present position that I am privileged to do so.

On looking back over the last ten years I think we may fairly congratulate ourselves on the progress this Institute has made, the position it has attained, and, more important than all, the work it has done during that period. Ten years ago we had 1,400 Fellows and Associates; now we have nearly 1,700; not perhaps so large an increase as we could wish, but still a considerably larger increase than in the previous ten years.

It is true that our Register still lacks the names of some distinguished architects whom we should like to see there, and whose presence would strengthen our power for good, not only in London, but throughout the country. Many of them we know to be well-wishers of this Institute, and to appreciate the work we are doing; I can only say we should greatly value their presence amongst us, and should give due weight to their opinions on any matters in which they may consider that the policy of this Institute could be made increasingly useful especially in the interests of architecture.

Within the last few weeks we have been much gratified to receive a proposal for alliance from the Edinburgh Architectural Association, which has hitherto held somewhat aloof from us, and we shall, I am sure, all welcome the accession to our ranks of so earnest and able a body of architects, numbering many men who are really enthusiastic and doing good work, and, though the distance between us is great, I hope we may not infrequently have the pleasure of welcoming some of their members amongst us here, and that the alliance may prove of advantage to both Societies.

It has often struck me how little we know of the proceedings of our Allied Societies, their aims and the matters on which they feel most strongly, and that anything that would bring us more into touch with them would be a mutual advantage. With this view, one naturally turns to the Journal, so ably conducted by our Secretary, Mr. Locke, and there we find our noble selves fully reported in all the glory of large print, but not much space given to the proceedings of our Allied Societies; and it appears to me that if that space could be increased, a portion allotted to each Society, and if the Societies would help us by sending up reports of their papers and discussions, we should all get to know a great deal more of what is going on in the country, and become more familiar with the men who are taking an active part in each Society's affairs, while the information thus given would greatly widen the interest of our Journal. The addresses of the local Presidents could be printed, together with other papers and discussions; and these could, if so desired, be printed separately and issued to the members of the local Society concerned, and thus each Society could obtain an independent Journal of its own proceedings at a very moderate cost.

While on the subject of the Journal, I may say the Editor would be very glad to receive communications from members which would add to the interest of the Journal, not only from Fellows, but also from our younger members.

The President of the Architectural Association of Ireland (Mr. F. G. Hicks), in his opening address the other day, said, speaking of his Institute, "It isn't a bit up-to-date, and there seems very little cohesion among the members, for they seldom have an opportunity of meeting." Well, I have heard something of the same sort applied to this Institute, that there is a lack of opportunity for members to meet and know each other, and I propose, with the permission of the Council, to give one or two informal "At Homes" here during the Session, at which possibly smoking may be permitted (to bring us "a bit up-to-date") and where members may meet in a friendly way and get to know each other better; and I cannot help thinking that, if you will support me by your presence, some good may be done in this direction.

The admission of Fellows to this Institute can hardly yet be said to have arrived at a final and satisfactory settlement, and in my opinion this will not be done until Fellows are elected solely from the ranks of the Associates, except in very exceptional instances. But there are at present a large number of practising architects we wish to see Fellows whom we cannot expect to submit to our Examinations. This is a matter which will have to be once more considered by your Council, more especially as the provision for the direct election of Fellows lapses in May next.

The financial position of the Institute is, I am glad to say, satisfactory. Ten years ago we had a capital of £5,800, now we have a capital of £11,500. *Then* our revenue hardly balanced our expenditure, *now* it exceeds it by something over £1,000 per annum.

It is obvious that this increased prosperity lays upon us the obligation of increased activity, for we are not a Society to accumulate funds, but rather to make proper use of those our increased prosperity supplies us with.

The question of premises is one that is always with us, and the increase of our office work, and that of the Library, is beginning to make it a very pressing one. In many ways our premises here suit us well enough, but we now occupy the whole of the building, with the exception of the galleries, &c., on the ground floor, which we unsuccessfully negotiated for on behalf of the Architectural Association and ourselves in 1896. Failing these galleries, our power of expansion here has come to an end, and the alternative is to build premises elsewhere. This raises the question of a site, which I mention now, as it is possible some of our members may know of something likely to suit our requirements, and, if so, we should be glad to receive from them any information or suggestions on the subject.

The Council, on the suggestion of the Finance Committee, have started a Premises Fund, and have placed the sum of £1,000 to this account.

A cause which I think this Institute should as far as possible assist is that of Architectural Education. The Institute, as an examining body, has deliberately left the education of architects to other architectural societies; and in this I think they have acted wisely, for the undue multiplication of educational centres is obviously undesirable. The Royal Academy has an excellent Architectural School, visited and instructed by architects, but does not undertake very elementary work, and deals with design only. The Architectural Association has recently started a Day School, dealing with elementary work, and worthy of every encouragement; it is a scheme which, I venture to think, this Institute would do well to foster by every means in its power, both financially and otherwise, while individual architects could also do much to assist it by advising parents to send their sons for one or two years to the school previous to their being articled to them.

These two schools, at the Academy and the Association, do to some extent overlap, and if a certain course at the Association schools could be recognised as giving entrance to the Lower Architectural School of the Royal Academy, much in the same way as certain work at the public schools will admit a man to the University of Oxford, subject of course to any conditions that might be thought desirable, a great impetus would be given to both schools, and architects might at last feel that the education of the next generation was in a fair way to being placed on a satisfactory footing that would be capable of great development. There is, I think, no worthier or more unselfish object for this Institute to promote, or one that is more likely to influence architecture for good, than the careful and systematic education of our young men, by a system which will not supplant the present system of apprenticeship, but will rather supplement it by supplying that which cannot be learned in an architect's office, or at least can be better taught systematically in a school.

Our Examinations are, I believe, proving of real use to the younger men, and, judging by the increasing number that enter for them, they are fully appreciated. Ten years ago 305 went up for these Examinations, while last year there were no fewer than 674.

The real benefit of these Examinations is the work required in the preparation for them. We do not claim that they necessarily turn out artists (these are born, not made), but we do claim that, with the knowledge thus obtained, it enables those who are gifted with the artistic instinct the better, and with the more certainty, to realise their imaginations and aims. It is an object for a young man to work for, and an inducement for him to acquire knowledge in some branches of our complex art which, though very necessary for its proper realisation, are apt to be neglected as uncongenial. In connection with this matter may I venture to hope that architects will give all reasonable facilities to those under them to undergo the necessary preparation.

The question of competitions is another of those questions that are always with us, and as long as architects see fit to enter them it is plainly the duty of this Institute to do what it can to secure—first, the drawing up of such conditions as shall be fair to both parties, and at the same time not entail more labour on the competitors than is necessary to enable a competent assessor to arrive at a just decision; and secondly, to secure the adoption and execution of the best design.

With this end in view a series of suggestions for architectural competitions was drawn up by this Institute in 1881, and reconsidered and revised by the Council during the last Session. These have recently been sent to all public bodies likely to organise competitions; in addition to which a copy is always sent to the promoters of a contemplated competition as soon as it is heard of by the officials of this Institute. But when all this is done there still remains the question of the appointment of the assessor, a matter of supreme importance both to the promoters and the competitors. Ever since 1881–2 architects have insisted that a professional adviser should be appointed in all open competitions, and in many cases the President for the time being of this Institute is asked to nominate the assessor, and after some enquiry into the matter I can find but little objection taken to the selections made, or to the decisions given, bearing in mind, as I well know by experience, that the decision can seldom be thoroughly satisfactory to more than one of the competitors. It has been, however, urged by some that the selection of the assessor should be made by a small committee, rather than by the President, and that two or more assessors should be appointed in all competitions of any size. Personally I do not share this opinion, believing that the sense of individual responsibility is likely to give better results in both cases.

How far the system of selecting an architect by competition for the erection of any building is a desirable one will, I suppose, always be in dispute; but that it gives an equality of opportunity to all architects, great or small, known or unknown, is, I think, indisputable; and this has always seemed to me one of the strongest points in its favour, for we all could name men, now doing excellent work, whose first opportunity came by competition, and we know in this crowded world of ours how difficult it is for new men to obtain a hearing.

Before leaving matters more especially connected with the affairs of the Institute, I should like to say a word on behalf of the Architects' Benevolent Society. There are so many who faint by the way, and to whom a little temporary assistance is of untold value; there are so many others who have been worsted in the battle, and through ill-health and other difficulties have fallen out of the ranks, that great demands are made upon the funds of this Society. It is surely our duty to provide for them without going outside for help. Mr. Macvicar Anderson last year raised in a short time over £1,000 with this object, a very handsome and most acceptable addition to the funds; but interest is very small now and the cost of living very high, and the income of the Society still wants largely increasing. The Council of this Institute, for the first time, have voted an annual contribution of £20, and there would be nothing pleasanter than to see the number of annual subscribers largely increased during the present year. At present out of 617 Fellows, only 191 subscribe: and out of 1,066 Associates, only 70 subscribe. I venture to think that this ought not so to be.

And now, Gentlemen, if I have not already worn out your patience, I will ask you to consider some questions of wider architectural interest than those we have been considering.

The interests of this Institute are with both old and new buildings.

Our interest in old buildings is to trace the history of their origin and growth, and to devise means for their maintenance and necessary repair.

The fall of the Campanile at Venice forcibly reminds us of the necessity for continual watchfulness as to the structural stability of ancient buildings, and the engineer's report on the foundations of our own St. Paul's still further emphasises the fact; and while these instances by no means justify undue interference or rebuilding of these structures, they show the danger of endeavouring to hand them down to posterity in exactly the same condition as we have received them. Most of the members of this Institute will, I think, sympathise with the desire of the Italians to re-erect their fallen tower, and be pleased that the Royal Academy has taken the lead in showing the practical sympathy of art-loving England with Italy in her loss. But how much better, by careful maintenance and judicious repair, to avoid such catastrophes!

In the case of St. Paul's a note of warning has been sounded apparently none too soon, and we look to the guardians of that great pile to take every precaution, on the best possible advice, to ensure its safety, appealing to the Government for funds should that be necessary.

But there is another and even greater danger threatening the buildings and antiquities of the kingdom which would rob us of much that gives this old country its charm; it is, I am afraid, a more subtle danger, and therefore more difficult to deal with. I mean the wholesale depredations of the "art" dealer.

I am informed, on reliable authority, that certain districts in this country are systematically mapped out by these gentlemen, and anything of interest, such as a panelled room, a moulded ceiling, a bit of ironwork even, a chest, or a clock, are all carefully scheduled, the position and means of the owner ascertained, and, as opportunity offers, the property is purchased, the cottage or house often pulled down, the contents sold, generally abroad, and then the land, stripped of its little treasures, is resold. It is difficult to use temperate language about such proceedings; but surely it behoves us, before it is too late, in conjunction with other Societies, to see if it is not possible to take some united action to get these buildings and fittings registered as national belongings, so that, at any rate, they cannot be removed from this country, a course which, I understand, has already been adopted, to some extent, in France and Italy. This is work in which other Societies are also interested, and we are always ready to act with them as occasion arises; indeed, it interests and affects all educated Englishmen.

It is in modern architecture, however, and its allied arts that our influence is naturally most likely to be exercised, especially at a time of such exceptional building activity as the present.

The Government is largely engaged in the erection of public buildings; local authorities all over the country are busy with the erection of town halls, asylums, schools, technical institutions, &c.; while the buildings, residential and commercial, in our great towns continue to increase at almost an alarming rate. What, I think, must strike most of us in all this activity is that while minute control is exercised by public authorities over the details of these buildings, such little control is exercised over the laying out of our cities that, to a great extent, they seem to be left to lay out themselves.

How often we see a really noble and costly building hidden away in some inconvenient and cramped site, without any approaches worthy of the name, simply because the land was easily obtainable or happened to be vacant at the time, or could be obtained cheaply, or to improve the value of adjoining property; reasons we have heard put forward repeatedly, but nearly always resulting in the loss of a great opportunity of ennobling and beautifying the town; while, instead of money being saved, as is foolishly supposed, money is really wasted and thrown away.

A predecessor of mine in this Chair once urged when heading a deputation on the erection of a public building that the extra cost necessary for its worthy completion would, even from a commercial point of view, be soon repaid by the increased attractiveness of the city, and the number of visitors that would be drawn to it. The suggestion was received as if it was not seriously meant; but surely there is force in the contention, though it is but a secondary reason for urging on the public authorities the importance of so placing their public buildings that they may be the ornament and crowning feature of the town.

Why is the National Gallery site so frequently pointed to as an ideal one? Surely because it has, as so few buildings have in London, a slightly elevated site, with a large open space in front of it, and is approached by a main thoroughfare leading directly to its façade. The Royal Exchange has a fine site, for a similar reason. Wren carefully planned the most splendid approaches to St. Paul's, which would have made the City one of the finest in the world; but the greed and disputes of the citizens unfortunately prevented his scheme being carried out. Most of our public buildings have no dignified approach, and usually a general view can only be obtained in sharp perspective, from the roads which run *past* them, not *up* to them, and, as Wren says, they are seen sideways. The matter is of still more importance now that the picturesque manner of the Houses of Parliament and the Law Courts is giving place to a more palatial and formal style. Continental towns set us a great example in this respect, and though we may consider their love of straight avenues and boulevards is often carried to monotony, we cannot but admire the dignified and monumental surroundings they almost invariably contrive to provide for their buildings. I would venture to assert, though it should surely not be necessary, that every public building should be entirely detached, and should stand on a site of an area at least half as large again as the area which the buildings actually cover, and that they should, wherever possible, have a fine road leading up to them. The Americans, who are generally credited with a keen eye for the financial side of a question, are fully alive to this point, and are laying out their cities with great monumental dignity. It seems almost impossible to exaggerate the importance of the architectural surroundings of a building. In the case of private houses some architectural support in the way of steps, walls, and terraces is now usually designed, though unfortunately by no means usually carried out, and one has only to look at the design and the executed work to see how great the loss has been. But if important in a house, how much more so in a great public building! And yet in England how often is this entirely ignored.

Another matter which I notice in London and other places with regret is the disappearance, in the new quarters, of the old-fashioned "square," which adds so much to the appearance of the older quarters. The new-fashioned "gardens" apparently have taken their place, the difference being that while a "square" was bounded by a public road, and had the fronts of the houses facing it, the "gardens" have no surrounding road, and the backs of the houses abut immediately upon it. The result, of course, is that while the "square" adds greatly to the variety and beauty of our streets, the "gardens" are entirely hidden away, and might be non-existent, as far as the public thoroughfares are concerned. The advantage claimed is the increased privacy obtained for the "gardens," counterbalanced, surely, by the improved outlook given by the "square" to the front of the houses, while the somewhat sordid surroundings of the "garden," with its rows of back windows and its stagnant air, hardly make for beauty or restfulness.

Numerous other points in the laying out of our cities will occur to all of us, but I mention these two with a view to asking whether something could not be done to ensure that all such matters should be duly considered while improvements are under contemplation, and before it is too late. I venture to think that these are matters in which this Institute and our Allied Societies can do important public service.

The design and details of buildings are a matter for the individual artist, and not one, in my opinion, in which this Institute can often, if ever, usefully interfere; but when great improvements are in contemplation the opinion of such a body as ours, composed of Societies all over the country, may, I think, be of great use to the public authorities. Never, I feel assured, was there a time when our Corporations and County Councils were more anxious to do all in their power to improve the æsthetic aspect of our cities and towns, or more willing to avail themselves of every means to that end that may be open to them. The Government and the London County Council have frequently consulted this Institute on matters of architectural importance, and other public bodies do, from time to time, consult with their local Architectural Societies. Something, however, more definite seems to be required than this.

At present, as we all know, we architects are unable to erect any building, in any of our towns, without first submitting very complete plans, and in many cases elevations and specifications, to the borough surveyor, who exercises, under the local bye-laws, a strict supervision with regard to height and size of rooms, windows, thickness of walls, the minutest details of drainage, and other matters; but when it comes to laying out suburban districts, street improvements, and such like, which call for the highest qualities of the architect, the plans are usually drawn by the borough surveyor, and subjected apparently to practically no expert criticism whatever.

Now, might it not be required that when such schemes have to be prepared they should be submitted for criticism and advice to some expert architectural authority, such as, say, the local Architectural Society, who might also be asked to nominate an architect to consult with the surveyor in preparing the scheme, and, in the event of the Corporation or Council and the Architectural Society not agreeing on any point, might not the question be referred, say, for example, to the Council of this Institute? It surely could not be argued that this would be derogatory to the borough surveyor, for, as we architects cheerfully submit our proposals to the surveyors, there would seem to be no impropriety, but quite the reverse, in the surveyors laying their architectural schemes before the architects, and, in important architectural schemes, working with them.

In saying this it must be understood that I am not in the least impugning the capacity of the borough surveyors. They are, we all know, an exceedingly able body of men; but they are selected for these posts on account of their fitness and acquaintance with subjects somewhat apart from architecture proper, the study and practice of which subjects do not especially fit them for the designing of work of the highest architectural importance. They are, I venture to think, liable to have great pressure put on them to sacrifice too much to the very important questions of convenience and economy; and if this is so a further independent opinion would greatly strengthen their hands.

The tendency in recent years has been with Corporations to substitute for the official "architect," as he used to be called, the surveyor; and this is, probably, the most reasonable course, for the matters which the Works Department of a Corporation or Council have mainly to superintend would more perfectly come under this heading; but it would seem reasonable that, when strictly architectural matters have to be dealt with, they should be subject to the criticism of architects, not necessarily officially connected with the local body.

I have dealt with this matter at some length, because it seems to me one in which the

Institute could be of real use, and because it is one which so greatly affects the beauty of our cities and towns.

Another matter to which the attention of this Institute has been called is the local building by-laws in many rural or practically rural districts. This may at first sight seem a subject very remote from architecture, though in reality, as many of our members know, it affects architecture very much. These by-laws for rural districts are often drawn up on the lines of the building laws of large towns, they impose most unnecessary and burdensome conditions on those building in the country, and though the attention of the Local Government Board has been directed to the matter, and a deputation has been received, but little more has been done.

The London County Council have schemes on hand of the greatest magnitude, and they have, as is well known, consulted this Institute with reference to the great new thoroughfare from Holborn to the Strand. Unfortunately they were not able to adopt our suggestions in their entirety; but their committee, with the best intentions (which they appear not to have been strong enough to carry through), obtained designs in a limited competition, and a report upon them by an assessor, by whose decision everyone would have been willing to abide. This report, however, was not made public for two years, and appears to have remained a dead letter since; and now, I believe, this Institute and the public are absolutely in the dark, as to whether there is to be any general scheme or control over the buildings to be erected, and, if so, by whom this control is to be exercised, whether each plot is to be let to the highest bidder, without any reference to a general scheme, and, finally, what has become of the design placed first in the assessor's award; and yet it is hardly too much to say that in almost any other capital in Europe it would be looked upon as a matter of public and national importance, and surely it is one on which all are entitled to be informed.

In these public matters connected with architecture the daily press might do much to educate public opinion; without the aid of the press little is likely to be done. But in order to have the necessary influence, architectural matters must be treated with a complete and thorough knowledge of the subject, as is usually the case in matters affecting the cognate arts.

The encouragement of local schools of art by their municipalities is another matter that should interest this Institute. It will be remembered that when London was being decorated for the recent Coronation the decoration of Westminster Bridge was entrusted to the Royal College of Art; and, mainly through the instrumentality, I believe, of Sir William Richmond, funds were provided by the London County Council for the purpose, the students giving their services. A very ambitious scheme was prepared and carried out, though, owing to the postponement of the Coronation, the scheme hardly received the attention it deserved; but I have reason to believe it gave a great impetus to the work of the College, the students devoting much enthusiasm to a scheme which was not a mere exercise, but one in which their work was actually to be seen in position.

I think the London County Council and all concerned are to be congratulated on this experiment, which might be usefully followed throughout the country, for there are many buildings required for temporary purposes, such as those for exhibitions, receptions, rejoicings, meetings, all of which require erection and decoration, and present precisely the opportunity required for students to try their hands upon, and so to learn how much their work gains or loses when seen in reality, and in other surroundings than the studio in which it has been prepared. The employment of students in temporary work such as this is better than their employment on more permanent work, where their inexperience remains recorded against them, and may only end in discouragement. Besides it is only comparatively seldom that an opportunity for permanent work occurs, and when it does it is more properly reserved for men who have passed through the schools, gained experience, and proved their ability.

On the other hand, the temporary work gives the opportunity so much desired by students, and should it prove unsatisfactory it is soon removed and forgotten; besides, their employment should greatly increase the interest of the municipalities in their schools of art and the students who work in them. Much has been written lately of Municipal Socialism; we could, I think, do with a little more of it in this direction.

While considering the responsibilities of municipalities towards the encouragement of the arts and crafts, we may remind ourselves of the responsibilities that lie also with us. We rightly have a voice in the selection of the artists and craftsmen who work on our buildings, from the sculptor and painter who decorate them to the locksmith and upholsterer who furnish them; great encouragement may be given to the subsidiary arts if we take the trouble to find out individual artists to work with us in the various branches of the applied arts, and while fully illustrating our intentions give them sufficient freedom to carry out their own imagination and inventiveness, with their full share of credit for it. Depend upon it, great discouragement is caused to earnest workers, and much harm done, if just to save ourselves time and trouble we take the first article of commerce that comes to hand. Think what a school of craftsmen the enthusiasm of Pugin raised, producing work which is really little short of marvellous when we remember the sort of work that was being done at that time. We still feel its beneficial effects. Gilbert Scott, William Burges, J. F. Bentley, and many others, both dead and living, have done the same; it is certainly one of the directions in which we can do incalculable good or ill to our art, and it is a responsibility of which we cannot and must not divest ourselves.

Smoke abatement is another matter this Institute may do something to assist in. The thick dark veil that falls over all our buildings is distressing in the extreme. One of the principles which Wren laid down for the rebuilding of London was that "all trades that use great fires or yield noisome smells to be placed out of the town," and we should see to it in the present day that trades which cannot control this nuisance should be made to go outside.

Gentlemen, I cannot conclude without brief reference to one building recently erected, the Cathedral Church at Westminster, and its gifted architect, the late John Francis Bentley. The erection of a great church like this in the Metropolis is necessarily so rare an event that under any circumstances it would attract attention; but when, as in this case, the work was designed by one of the most inspired church architects of our day, and on lines different from any erected in recent times, it has naturally interested all of us, and excited in most of us an enthusiastic admiration. I do not propose here to give a critical notice of the building—that has already been done, from various points of view, by abler pens than mine—but rather to enjoy the pleasure of noting the erection of a modern building in which all can unite in finding much to admire, though it will be a matter of lasting regret that its architect was not spared in health to witness the completion of his labours, and to receive the congratulations attending the consummation of so great a work nobly, and one may say in his case heroically, carried through.

The present generation will probably have seen three cathedrals of the first class in course of construction—viz. the Cathedrals of Truro, Westminster, and Liverpool—the first, nearing completion, designed by one who mastered the old Gothic methods and feeling perhaps more entirely than any of his contemporaries, and who has produced a beautiful building, which might almost, so perfect is it, have been erected in the thirteenth century, and is probably destined to mark the high-water mark of achievement in the revival of a mediæval style.

At Westminster the problem was different from that required by the traditional Gothic plan of a cruciform church, with deep choir and transepts; and this difference naturally and properly affected the whole design, and while an enormous uninterrupted area has been provided for the assembling of large masses of worshippers, the mystery so necessary for the interior of a religious building has been admirably preserved by the careful lighting, the simple intricacy of its arches, its piers, its ambulatories, and its chapels. It is a step forward in church building, nobly planned, and one for which we may be all unreservedly grateful. I would only venture to hope that some day the entrance front may be better seen from Victoria Street by the removal of one or two houses, and that the interior of the building may in due course be worthily completed.

The last cathedral, Liverpool, is still one of the possibilities of the future; let us hope that it may prove, when erected, yet another step forward. I have already expressed my own opinion, that the author of the design named as the best in the first competition should have been given an opportunity of showing what he could do on the new site; it has, however, been decided otherwise. The request, in the first Conditions for the second Competition, that the building should be designed in a certain style was a curious instance of the inability of the public to trust architects to design for them what is most suitable, for though this condition has been since withdrawn, it is, I believe, generally understood that the promoters remain of the same opinion still. We can only hope that the best man may finally be entrusted with this great monumental work, and that, when it is completed, he may be rewarded by the unstinted admiration of his brother architects, the highest reward any of us can hope to gain.

We, all of us, lavish endless praise on old work, but are, perhaps, too chary of bestowing it upon that of our own time. If we are always contrasting the greatness of old work with the inferiority of the new, can we wonder if the public take the same view, and ask us to reproduce for them what we all so greatly admire? It is true we cannot reproduce old work; but the public do not understand that, for we do not teach them so. Great painters are not asked to paint in the style of Giotto, Fra Angelico, or Titian, and would not do so if they were. Excellent copies of these great masters are made, and in a few years are sometimes mistaken for the originals; but they are not made by our great painters, and are esteemed of little worth. Sculptors no longer masquerade our living statesmen in Roman togas, or attempt to reproduce a Jubilee procession in imitation of the Parthenaic frieze. Why, then, should we still be asked to design in the thirteenth century or any other bygone style? Because, we are told, we have no style of our own. But are we quite sure that a tradition once broken can never be picked up again? And are we quite certain that the Renaissance tradition has ever been entirely lost in England? I do not think so. Are we going on for ever telling our young men they must not only study but copy old work, for they can never hope to produce anything equal to it? Is that likely to give them inspiration? Are we to tell them that while Painting and Sculpture are alive, the last word has already been said on Architecture? There cannot be an architect who holds this opinion, though, I am afraid, under present circumstances we cannot wonder if the public do so. I am not thinking of that will-o'-the-wisp, a new style—that may or may not come, I do not know; but rather suggesting that by a generous appreciation of modern work, and by boldly and generously showing our belief in it, good contemporary work may be encouraged, and abound among us, so that the public may come to believe and be interested in it also.

There is one quality we all desire in our buildings, whether we attain it or not, *Repose*, a quality we find alike in buildings so dissimilar as the exterior of St. Paul's and the interior of Westminster Abbey, in St. George's Hall, and even in that ornate river front of the Houses of Parliament. It is the result of good proportion, arrived at by matured knowledge, and guided by a true artistic sense: it is entirely independent of styles, it combines simplicity without baldness and richness under control. It is a quality that can be felt, and, as Wren says, "aims at Eternity."

VOTE OF THANKS TO THE PRESIDENT.

Sir Lawrence Alma-Tadema, R.A. [*Hon. Fellow*].—Mr. President, Ladies, and Gentlemen,—It is my great privilege to propose a vote of thanks for the admirable Address we have all so eagerly listened to—an address full of interest for the Institute and, consequently, full of the aims of the profession that it represents—the exponents of that Art second to none, which would always be the glory of England were it only for its cathedrals. The Address was full of practical ideas, of many of which perhaps I am not a good judge. It dealt with the question of competitions, which seem to me, when fairly carried out, to be an admirable system, and to do away with over-great protection. Then there was that great question which is the order of the day, the question of Education; and also the question of Apprenticeship, which has declined so much of late years, to the great detriment of many crafts and professions, and of the nation. Let me beg you, gentlemen, not to do away with apprenticeship for architects. Let them study what is necessary in the schools, but let them have their years of apprenticeship in the office, where they can learn so much that they cannot learn otherwise; and where, too, they profit by the experience of those who went before them, even centuries before them. Apprenticeship has been done away with in the art of which I am a humble servant. There was a time when the Vandycks and Raphaels went through their apprenticeship, and when they learned from their masters how pictures ought to be painted and were painted. Nowadays a youth is sent to the Academy, where he learns how to paint a head, but very rarely a hand; where he has to listen to some lectures on anatomy, &c., and on architecture, and then is sent into the world to make pictures. But he does not know what a picture is. I was specially fortunate in that, having the knack of perspective, my master Leys took me into his studio and made me work on his pictures. That was a great thing for me, and I profit by it still daily. The question of education has another side, which has a great influence upon the art of the *full*-grown artist—if I may call him so, because an artist is never full-grown; he studies to the last, even in the last work that he produces he remains a student—I refer to the question of travelling. I am convinced that there is danger in a young man travelling in order to study the work of other countries. When, as a student in Antwerp, I received an offer of money from a friend of my mother's to go on a travelling tour and see what other countries had produced, I refused; I preferred to remain at home. I remembered that the best artists never travelled until they realised their own aims and capacities. Then only could they judge of what their art had produced, and then only could they suck out the honey of those beautiful flowers of civilisation. And so it is, I think, with regard to architecture. We should be much nearer our style, our new style, our national style, or whatever you would call it, if architects studied more at home, because there is plenty to learn in architecture in our beloved country. The President has referred to the new Cathedral at Westminster, and to our dear friend Bentley, who passed away so much too early, but who will never be forgotten as long as that Cathedral stands. Then there was the question of those who have been less successful, and the claims of the Architects' Benevolent Society. We were told that so many of our members are not subscribers. I am one of the culprits, and, if you will allow me, I will subscribe at once [*taking a sheet of paper, Sir Lawrence subscribed his name for a donation of £5 to the funds of the Society*], and I invite those who have not subscribed as yet to follow my example before they leave the building. I beg to propose a hearty vote of thanks to the President, which I am sure will meet with the unanimous assent of all in the room.

Mr. J. Macvicar Anderson, F.R.S.E. [*Past President*]: Mr. President, Ladies and Gentlemen,—I could have wished that the agreeable duty of seconding the Vote of Thanks which has been so happily proposed by Sir Lawrence Alma-Tadema had fallen into abler hands; but as the invitation came to me from the President and Council, I had no option but to accept it as a command. I am quite sure, Sir, we all join with you in congratulating our late President, Sir William Emerson, upon the signal honour that has been conferred upon him; and while saying so, I venture to go one step further and congratulate you, Sir, on the eminent position which you now so deservedly occupy. I have more than once expressed my conception of what an ideal architect should be: primarily, and before all things, an artist; secondly, and necessarily, a scientist; and thirdly, and also necessarily, a man of business. Now, I think all of us who know Mr. Aston Webb, or his works, must be convinced that he possesses all those qualifications in an eminent degree. I therefore not only congratulate him, as I do most heartily, on the deserved honour that he has received, but I congratulate the Royal Institute of British Architects with no less cordiality on having him as their President. I will not presume, Sir, to detain this meeting by referring to all the subjects that you have dealt with, but there are a few on which I may offer one or two remarks. You have referred to the increase in our membership, and have said that, although satisfactory, possibly it might have been greater. So it might; but if you consider, not merely the question of those who have joined, but the much sadder consideration of those we have lost—many of them very dear to some of us, for instance, my dear old friend Ewan Christian, Charles Barry, and others—when you reflect on this, I think the increase in our numbers may be regarded as eminently satisfactory. You have announced that the Edinburgh Architectural Association have, after what you have described as some hesitation, come into alliance with the Institute. It has been said by no smaller an authority than the great Dr. Johnson, and by others after him, that the Scotchman is a very cautious and canny person. Now, as a Scotchman (and I am proud of my nationality) I regard all such remarks as gross libels! At the same time, if there is truth in the observation that a Scotchman thinks twice before he enters upon a new venture, you may be quite sure of this, that when he has once made up his mind he will go through with it. Therefore I congratulate both the Institute and the Edinburgh Architectural Association on having come together, and believe that the alliance will result in good to both. You have referred several times, Sir, in your Address to ten years ago. Ten years ago brings us back to the period when I had the honour of sitting in the chair which you now occupy. On that occasion I remember calling attention to the dearth of attendance of members at our regular meetings, and I appealed to them in what seemed to me the honest and straightforward course of pointing out to them their duty as Fellows of the Institute. Alas! for the decadence of ten years. To-night we have listened to an invitation put forward to members of the Institute to do their duty in this way—not as I put it—but on the so-called "up-to-date" and somewhat questionable inducement of a Smoking "At Home!" It is possible, Sir, that you may be supported not only by the members of the Institute, but by those whom I have been accustomed to designate as "the fair sex!" Whether, however, the fair sex will add to their fairness by indulging, as so many of them now do, in clouds of fog, is questionable! In regard to our funds, it must be gratifying to every member of the Institute to hear that they are in such a satisfactory condition. Referring again to ten years since, I remember suggesting an improvement in the publication of our JOURNAL and TRANSACTIONS, which I thought I was not optimistic in reckoning would save the Institute at least £500 a year. I have had nothing to do with the management of the Institute of late years, and I do not know what the actual result has been; but I am sanguine enough to hope that that does form a not unimportant part of the diminution of expenditure which has taken place. The premises question is one which you have also referred to, and I agree with you, Sir, that in many respects our present premises suit us very well indeed. It is a subject that I should not be disposed personally to press. Of course, the time may come when we must, if we do not manage to get additional accommodation here, go elsewhere; but I should hope that the Council will see its way to let the matter rest for the present, and to let the question develop itself. We never can tell what the changes of life may bring, and possibly we may be able to get what we want here, a situation which must be admitted by everyone as being scarcely one to be improved upon. The question of examinations I will not enlarge upon, except to recall that—again referring to the historic ten years—that was a subject that filled our minds at that time with considerable anxiety. You may remember that the examination of Associates had then lasted ten years, and we were considering the question of subjecting Fellows to a similar ordeal, which we afterwards decided to do, the Fellows being elected only, subject to certain exceptions, through the class of Associates. It is eminently satisfactory to me, having been a believer in the examinations, to hear that so large a number of men now come forward for them. It is a subject which has been considerably misunderstood. You may remember, Sir, that at that time a Memorial was presented to us headed "Architecture, an Art or a Profession"—architecture being of course not an art *or* a profession, but an art *and* a profession, as I have already hinted in the remarks referring to yourself. It is very gratifying that the examinations have proved such a great success to the Institute. The question of competitions, I am afraid, Sir, we shall never agree upon. My opinion has been often expressed on the subject, and I will not enter upon it now except to say that I have always regarded competitions as an almost unmixed evil, not an advantage. I am afraid, therefore, I do not agree with Sir Lawrence Alma-Tadema's remarks on the subject, but I think that architects could put a stop to all the evils of it by simply declining to compete. As regards the Architects' Benevolent Society, the figures that you have quoted, Sir, are very remarkable. I am quite aware that we are a poor lot, taking us all round; but at the same time there are few of us who might not afford a little as an annual subscription to that most deserving Society, and it is extremely gratifying to see that so good an example has been set to-night by our distinguished Honorary Fellow, Sir Lawrence Alma-Tadema. The only other subject to which I will refer is that of the improvement of London, to which you devoted a considerable part of your Address. We must all wish that Sir Christopher Wren's splendid idea had been carried out; London would then have been something to be proud of, instead of being composed, as regards the City particularly, not of fine streets, but of what one may almost designate as narrow lanes. A good deal has been done and is being done towards the improvement of London by widening old streets and forming new thoroughfares. Opportunities are lost, no doubt—one notable opportunity was lost in regard to the National Gallery site, to which you have referred. I have always thought, and I had the opportunity of putting it before a Parliamentary Committee some years ago, that the grand improvement there would be to widen Whitehall on the west side, so that the National Gallery and the Nelson Monument would have stood centrally in it; however, the old question of cost came in, and the idea unfortunately was not carried out. One other thing on which I think we must all congratulate ourselves—at least I do—is that the latest idea of the London County Council to erect their Palace on the site of Adelphi Terrace and to sweep away all the characteristic work of the Adams, whose work we all appreciate and are so fond of, has, for the present at all events, fallen to the ground. We owe something to my friend Mr. Statham, whom I see present, for the way in which he has protested against it, and I trust we shall never see that scheme, at all events, carried out. I will not detain the Meeting further than to second very heartily the vote of thanks which has been moved by Sir Lawrence Alma-Tadema to our President for his able, thoughtful, and interesting Address.

The Motion, having been put by Sir L. Alma-Tadema, was carried by acclamation.

The President, having briefly expressed his acknowledgments for the Vote of Thanks, referred again to the premises question. It was, he said, his own ambition, as he was quite sure it was the ambition of all architects who were present in that room, that some day the Institute might be able to erect buildings which would receive the honest appreciation of such an assembly as that present in the Meeting-room that evening.

INCORP.
1837
1887

9, Conduit Stret, London, W., *8th Nov.* 1902.

CHRONICLE.

The First Sessional Meeting.

The Opening General Meeting was one of the best attended on record. Some present recalled that such a gathering had not assembled in the rooms of the Institute since the day when the late Lord (then Sir Frederic) Leighton was presented with the Royal Gold Medal in 1894. Mr. Aston Webb, who took the Chair for the first time as President, received the warmest of greetings, and the hearty and prolonged applause at the close of the Address showed with what appreciation the audience had followed it throughout. The reference to the honour bestowed by the King upon Mr. Webb's predecessor in the Chair, Sir William Emerson, who was present among the audience, gave members an opportunity for a second and equally cordial manifestation of feeling. The President's appeal on behalf of the Architects' Benevolent Society was turned to happy account by Sir L. Alma-Tadema when proposing the Vote of Thanks for the Address. Describing himself as " one of the culprits " aimed at by the President, he stepped to the table and subscribed his name upon a sheet of foolscap for a donation of £5 towards the Society's funds, calling upon other non-subscribers to follow his example. Mr. George Frampton, R.A. [*H.A.*], later, attached his signature for a similar amount. This special list is still open at the Institute, and the addition of further names to it will be duly noted in this column.

The New Allied Society.

Not the least interesting item on the Agenda at the Meeting last Monday was the Council's recommendation that the Edinburgh Architectural Association be admitted to alliance with the Royal Institute. The President in his Address expressed the gratification with which the Council had received the proposal for alliance, and the manner of its adoption by the Meeting when the motion was put from the Chair leaves no doubt that the alliance is very cordially welcomed by the general body. The Edinburgh Architectural Association, which has just entered on its Forty-fifth Session, was formed to promote and afford facilities for the study of Architecture, and to serve as a medium of friendly communication between the members and others interested in Architecture. It has four classes of subscribing members—viz. *Fellows*, practising architects of three years' standing; *Members*, persons engaged in artistic or collateral pursuits or interested in the study of architecture; *Associates*, assistants, pupils, and apprentices of architects, civil engineers, or surveyors, and junior designers; *Corresponding Associates*, Associates residing more than fifteen miles from Edinburgh. Fellows and Members constitute the Senior, and Associates the Junior, Section of the Association. There are some 264 members in the Senior Section, and 209 in the Junior. Some Past Presidents are Professor Baldwin Brown [*H.A.*], Dr. Rowand Anderson, and Mr. Hippolyte J. Blanc, R.S.A. [*F.*] The present President is Mr. A. Hunter Crawford. The Association issues annually some well-illustrated *Transactions*, a few volumes of which are in the Institute Library. There are now four Scottish Societies allied to the Institute—those of Aberdeen, Dundee, Edinburgh, and Glasgow. The admission of the Edinburgh Association will necessitate a re-arrangement of architectural districts north of the Tweed, and a revision of the map issued with the Kalendar.

The Statutory Examinations in Building Surveying.

The examinations of candidates seeking certificates of competency to act as District Surveyors under the London Building Act, or as Building Surveyors under local authorities, held by the Institute pursuant to statute, took place on the 23rd and 24th ult. Five candidates attended and were examined—three for office under the London Building Act, and two for office under local authorities. Two among the former passed, viz.,

William George Perkins, of Carn Brea, Mantilla Road, Tooting, London.

Arthur Halcrow Verstage, of 34 Cantlowes Road, Camden Square, London.

These gentlemen have been granted by the Council Certificates of Competency to act as District Surveyors under the London Building Act. The other candidates failed to satisfy the Board.

The Council, on the recommendation of the Examining Board, and with the approval of the London County Council, have resolved that these examinations shall be held once a year only—viz. in the month of October—instead of twice, as formerly.

In the new Kalendar, at pages 299–306, will be found a List of District Surveyors now holding office under the Act, together with a full description of the districts under their charge, and particulars of their offices, residences, hours of attendance, &c.

The Royal Institute of Ireland.

A deputation from the Council of the Royal Institute of the Architects of Ireland waited upon Lord Dudley on the 17th ult. to present an address of welcome upon Lord Dudley's taking up his residence in Ireland as Lord Lieutenant. The deputation consisted of Messrs. J. Rawson Carroll [*F.*], Vice-President; Sir Thomas Drew [*F.*], W. M. Mitchell [*F.*], W. J. Gilliland, R. Caulfield Orpen, C. A. Owen [*F.*], Albert E. Murray [*F.*], J. Howard Pentland, Frederick Batchelor [*F.*], and W. Kaye Parry [*F.*], Hon. Sec.

Mr. Rawson Carroll, Vice-President (in the absence of the President) read the address from the Institute, which stated:—The Institute has over one hundred members upon its roll, including architects practising in all parts of Ireland. The qualifications necessary for membership have been so framed as to admit all architects of good repute who have acquired a sufficient professional training to enable them to discharge the responsible duties which, from the nature of their professional work, are constantly laid upon them. No qualified architect of unblemished reputation is ever refused admission to the ranks of the Institute. It is the anxious desire of every member of the Council that the privilege of membership should be synonymous with upright conduct and faithful, earnest, truthful work. In their efforts to protect the interests of the members of an honourable profession and to safeguard the public from the action of irresponsible persons who have no claim to the title of architects, the Council look with confidence for your Excellency's support and goodwill. The Council venture to hope that when your Excellency has had the opportunity of examining the work of Irish architects you will be justified in forming the opinion that they have done something towards the advancement of architecture and the embellishment of the cities and towns of their native land.

His Excellency, in reply, said: Gentlemen, I thank you warmly, both on my own and upon Lady Dudley's behalf, for your kind words of welcome and for the renewed assurance of your loyalty to His Most Gracious Majesty the King. I have not, as yet, had an opportunity of visiting the larger towns of Ireland, but from what I have seen in Dublin there is ample evidence of the artistic genius of Irish architects. The functions of your Institute, as set forth in your address, are deserving of every support, for it is abundantly clear that no country can take its proper place among the civilised nations of the world without institutions such as yours, which do so much to form and guide the artistic perceptions of the public. Ireland can supply in great profusion and variety the raw materials of your craft, and I feel sure the efforts which the Department of Agriculture and Technical Instruction is now making to bring before the public notice the beautiful marbles, the splendid building stones, slates, &c., of this country are appreciated by your profession. I am very glad you recognise and bear testimony to the efforts which have been, and are being, made by that Department and other public bodies to promote the prosperity and develop the resources of the country. Upon that prosperity your opportunities for the full display of your art must to some extent depend; but money alone will not build beautiful buildings, and it is probably the most valuable function of an Institute such as yours to steadily educate public taste until the community will not tolerate bad art. It has given me much pleasure to have the opportunity of meeting you here to-day, and I thank you again for the kind wishes you have expressed to Lady Dudley and myself, and for the happiness you have wished for us during our official residence amongst you.

The members of the deputation were introduced to their Excellencies.

The Campanile of St. Mark's, Venice.

From Cav. William Scott [*A.*]—

In connection with the mention of Mr. Blackall's paper (Journal, Vol. IX., p. 490) it might interest some of our members to compare the pamphlet by Commendatore Giacomo Boni—of which there is a copy in the Institute Library—entitled *Il Muro di Fondazione del Campanile di S. Marco.* The excavations to which Mr. Blackall refers were carried out entirely under the direction of Signor Boni as representing the Italian authorities, it being evident that they could not allow such a delicate operation to be conducted by a foreigner, though I remember hearing that an amicable arrangement had been made as to the expense incurred. I notice that while Mr. Blackall says the piles were of oak, and the planking of larch, Signor Boni states that the planking was of oak (*Quercus robur*) and the piles of poplar, *pioppo* (*Populus alba*). I was in Venice at the time of the excavations (July 1885), but can add nothing to the very complete information given in these two papers, except that I have in my possession a small piece of the oak taken out of the foundations, and this is still absolutely sound, hard, and perfect after its thousand years underground.

Bordighera: 20th October 1902.

From John Hebb [*R.F.*]—

The ruins of the Campanile of St. Mark at Venice have been removed in barges, and the piazza in front of the cathedral is now completely disencumbered of rubbish. The technical commission appointed to inquire into the causes of the catastrophe has already succeeded in making some curious discoveries. In the caretaker's lodge, on the ground floor, what is described as an economical kitchen (*cucina economica*), possibly a hot plate, or perhaps a gas stove, had been installed in the thickness of the external wall; in the centre of the tower the brickwork had been cut away in order to form cupboards, recesses, and lastly a small aquarium. Another face of the tower has been cut into, as far as the middle of the thickness of the wall, to increase the size of the caretaker's lodge, and in the wall thus reduced in thickness openings had been formed for ventilation. In other words, the members of the commission have been enabled to verify with their own eyes the prophetic words of the Government architect, Commendatore Giacomo Boni, that "the Campanile was in the condition of a man who had both his legs amputated." It results from these investigations that the stability of the foundations of the tower is now considered to be placed beyond question, and one of the most specious obstacles to the proposed rebuilding, namely, the alleged insecurity of the foundations of the Campanile, the palladium of Venice, has, it is hoped, been removed.

It is a curious coincidence that the present secretary of the municipality of Venice, the Commendatore M. Memmo, who is believed to be the last of his race, is a descendant of the Doge Memmo in whose reign the foundations of the Campanile are said to have been laid in 888.

REVIEWS.

AN EPOCH-MAKING CATHEDRAL COMPETITION.

Filippo di Ser Brunellesco. By Leader Scott. "Great Masters in Painting and Sculpture." 8o. *Lond.* 1901. *Price* 5*s. net.* [*Messrs. George Bell & Sons, York Street, Covent Garden, W.C.*]

The recently published life of Filippo Brunelleschi, by Leader Scott, contains in a small compass much interesting light upon the conditions of architectural practice in Florence five centuries ago. The records of the cathedral works have provided a number of items of practical interest to architects which the author sympathetically deals with, and joins to a correct appreciation of the facts a description of his subject's character and genius which is readily felt to be natural and satisfactory. The central interest of the book is, of course, its narrative of the building of the dome of Arnolfo's great cathedral by Brunelleschi, and of how he secured the commission, for such it can be called, by a competition in many characteristics similar to those of our own day. We find the cathedral committee; the rivals; the expert assessors and their fees; the hesitation to trust a gigantic work to one man, and the appointment of consulting architects; the workmen and their trades unions; the strikes, and their settlement by the employment of blacklegs by the architect; the committee's inspections and luncheons, and the limitation of a supply of intoxicating beverages to workmen upon a very high building; and a strong sense of professional exclusiveness—all as picturesquely existent in Florence in the first quarter of the *cinque cento* as they are permanently irritant in this impending session of the Royal Institute of British Architects.

All this, 500 years ago, seems so curiously modern and unexpected, in spite of the known persistency of those elementary instincts of humanity which engender competitions in architecture and "ca' canny" in the building trade, mainly because it occurs in the closing era of great mediæval achievement, when all, we have so long believed, was in such direct contrast in motive and method to ourselves and our habits, a difference which debars us—committees, workmen, and their politics being what they are—from hoping for any serene results to our labours in cathedral architecture competitions.

We can well take some valuable courage from this little book, in assuring ourselves that the compelling force of Brunelleschi's enthusiasm for his own certain knowledge of the possession of architectural capacity overcame the difficulties around him, and sufficiently strengthened his resolve to endure all the annoyances of mistrust and pettiness to which he was subjected. Uncertainty or cowardice of his own power of design would have been revealed at an early stage in the erection, upon a scale never before attempted, of that huge cupola; but the architect was certain of himself, and therefore courageous, and his confidence of progress upon the fruits of a vast previous study of the principles of ancient Roman buildings, enabled him to break away from the whole European mediæval era and bring to birth in a Gothic cathedral the architectural revolution afterwards known as the Renaissance.

The cathedral architect in him became a man, and is now more than the tool of a guild; he thinks for himself, has large ideals not hide-bound with traditions of the elders. The system, developed through an enchanting vista of centuries, which had vaulted and domed the churches of Christendom, had found a problem in the span of the Duomo octagon which its traditions and masters vainly endeavoured to solve, and failing in the initial endeavour to propound a scaffolding for its masterpiece, the whole system disintegrated and tottered to the ground. The dilemma of the span and the scaffolding prompted the notion of a competition for plans and models. The competition was promoted fairly, with a large premium for the winner, and payment of the expenses of the unsuccessful competitors; and it was wisely stipulated that the practicability of the design constructively should be demonstrated by a model.

Advertisement of conditions by proclamation and crier, and successive extensions of time ensued ere Brunelleschi's design, his own unaided work, was completed, demonstrated, and accepted.

But the appearance of Filippo Brunelleschi in the competition, and the revelation by it of his capacity to effect at Florence Cathedral that which the mediæval guilds and traditions could not, was more than a mere coincidence without previous connections. Seventeen years previously he had first gone to Rome, in some chagrin at the selection of Ghiberti's design for the baptistery door panel in a sculptors' competition; and had devoted himself to the study of Roman architecture, possibly from a connection of thought with the attention that sculptors and goldsmiths were then giving to antiquarian remains, and possibly also from the desire to explore and excel in an art unknown to his rival Ghiberti. His study was most thorough, extending to the careful measurement of the scheme, plans, and details of available Roman work, and he even uncovered the roof of the Pantheon dome to discern the secrets of its strength. It is possible that in all this the idea of solving the much discussed problem of the Duomo was present to his mind, and it is certain that on returning to Florence he had the conviction that his new acquaintance with wonders of the architecture of the ancients had provided the key to its solution. Enthusiastic certainty of his capability to do what was necessary carried him into the discussion of the completion of the Duomo with the masters of the work, and his vigour and persistency of self-assertion in committee was such that we are told how he had to be forcibly carried out of the room before proceedings could be concluded. Though laughed at in the streets on account of the absurdity of his ideas, he maintained that he had the solution at hand, and returned to Rome again, having left the masters of the guilds and of the work conscious of the existence of an individual who, though not of their brotherhood, or admitted as a master even of the building guild, being only a goldsmith, was convinced that he could perfect the failure of the age. The strong individual had impressed his strength upon the system, and the existence of his convictions alone—he had not revealed any scheme or plan—prompted the idea of a competition among all who had ideas or advice to offer for the completion of the Duomo. The high spirit, the new-found spring of life in Roman constructive art, and the confident will, with its reserve of power acted upon by the imaginative fire common to all artists, here fed with such stimulating fuel, focussed in Brunelleschi's person; and in spite of the incredulity of assessors, committee, and the citizens, his design won the prize of achievement, and demonstrated the first move of art beyond the limitations of Gothic tradition in cathedral building.

The life work of Brunelleschi has other characteristics than that of mere force of character. The mechanical part of his genius, a necessary concomitant, was always at work upon scaffolding hoists and stone jointing, while his early works in sculpture have wonderful interest and power. In architectural design he displayed a breadth of feeling and love of refinement in detail which combine in a quite enchanting way in such works as the Badia at Fiesole, the Pazzi Chapel at Santa Croce, and the churches of San Lorenzo and San Spirito, the plan of the latter being a masterpiece of simplicity and picturesqueness. The qualities of these works and of his domestic palaces are subjects of great interest to the architect, and upon which little can be said in a small book. The pre-eminent position that Brunelleschi holds as the founder of the Renaissance of architecture in Italy, and the immense influence which he exerted through a long life, and continues to do through his works, could almost be considered apart from the Duomo at Florence, and will continue to offer profitable study to the student of architectural history as well as to the practical designer; but, amidst all the charm and interest of his life and work, his victory in the epoch-making competition for Florence Cathedral remains the central feature, not only of Leader Scott's book and of his life, but of the architectural history of the Christian era.

Beresford Pite.

AN ANCIENT CASTLE OF DENMARK.

Le Château de Copenhague. By Carl Christian Andersen. Fo. Copenhagen, 1902. *Price* 40 *fr. H. Hagerup.*

The author of this work, Herr C. C. Andersen, was assisting the City Engineer of Copenhagen, in 1901, in some excavations of the site of the Castle of Christiansborg when he came across the massive foundations of a tower of the ancient castle destroyed in 1731. These remains led him to the interesting task of reconstructing the ancient castle, of which the work under notice, illustrated by reproductions of old drawings, plans, sections, and elevations, is a complete monograph. This castle, originally built about the year 1167 in the then little fishing village of Hafn as a protection against pirates, seemed to remain in the hands of the bishops till the early part of the fifteenth century, when it passed into those of King Eric of Pomerania. Meanwhile extensive additions had been made, the most noteworthy feature being the great blue tower the foundations of which were discovered in the recent excavations. It was in this tower that the unfortunate Countess Leonora, the daughter of Christian IV., languished a prisoner for twenty-two years. The castle was partly rebuilt in 1721, but, ten years later, it was pulled down, the moat filled up, and the rococo castle of Christiansborg erected by Christian VI. This in its turn was burnt in 1884. Herr Andersen's monograph is extremely well done, and cannot fail to be of interest to antiquaries. The text is written in Danish, but there is a *résumé* in French.

LEGAL.

The London Building Act, s. 74, sub-s. 2: Connection of Two Buildings.

At Greenwich Police Court, on 17th September, Mr. Baggallay gave his considered judgment in a case which had been argued before him by Mr. Germaine, K.C., for the owner, and Mr. Palmer Andrews for the London County Council. The summons was against Mr. Badger, District Surveyor, at the instance of Mr. G. F. Havell, builder, High Road, Lee, who appealed against a requirement of the District Surveyor with reference to the connection of buildings, Nos. 1 to 4 Obelisk Buildings, Lewisham. —Mr. Baggallay, in his judgment, said that the District Surveyor had required the builder to carry out section 74, subsection 2. which provided for special protection from fire in the case of any building used in part for trade and in part as a dwelling-house. The buildings in question were erected before 1894, and no objection could have been taken to them under any law then in force. Neither building was, however, constructed in accordance with section 74, subsection 2. The builder proposed to connect the two buildings by making an opening in the party-wall which separated them, and in these circumstances contended that No. 5 should be treated as an addition to Nos. 1 to 4, and that provided No. 5 be so altered as to comply with the section of the Act of 1894, he could not be compelled to carry out the requirements of the subsection in respect of the buildings Nos. 1 to 4, and he relied on sections 209 and 210, and that, even if it should come within section 74, subsection 2, he was nevertheless protected by section 210. If the intended operation amounted only to an addition or alteration to the existing buildings no doubt the builder's first contention would be sound; but he (Mr. Baggallay) was of opinion that the real effect would be to unite the two buildings within the meaning of section 74, subsection 2, and that in that case section 210 did not exempt him from the consequences. The objection of the District Surveyor was therefore good, and he ordered that it be affirmed.

Drain or Sewer?

At the Lambeth Police Court, on 21st October, Mr. Hopkins gave his decision in regard to a summons taken out by Inspector Kerslake, on behalf of the Camberwell Borough Council, against the New Century Estate Company, of Eastcheap, with regard to the repair of a combined drain draining a house in Linnell Road, Camberwell, owned by the defendants. The question for the decision of the Court was whether a deviation from the drainage plan sanctioned by the Camberwell Vestry (the predecessors of the Borough Council) had made the drain a sewer within the meaning of the decisions, and, as such, repairable by the Council and not by the defendants. The Council maintained that the deviation had not cast the burden of maintenance upon them, and relied upon the decision in the recent case of *Gorringe* v. *The Mayor of Shoreditch*, 86 L. T. Rep. 592. Mr. Hopkins, after reviewing the facts of the case, said he thought he was justified in holding that the work which was originally done was substantially the drainage sanctioned by the vestry. His order, therefore, would be that the defendants should carry out the work now required within one month. His worship expressed his willingness to state a case.

Duties of District Surveyors: Temporary Floor over Public Bath.

At the Marylebone Police Court, on 2nd October, Mr. Plowden heard a summons issued at the instance of Mr. Frederick Meeson, the District Surveyor for Paddington, against Messrs. W. H. Handover & Sons, builders, for failing to give notice before executing certain work at the Paddington Public Baths. Mr. Stokes, solicitor, prosecuted, and Mr. Dennis, solicitor, appeared to defend on behalf of the Borough Council. It seemed that for many years the Borough Council had been in the habit of transforming the public baths during the winter months into halls for concerts, lectures, &c. For this purpose it was necessary to erect over the baths a temporary floor. Up to the present year no notice had been given of this to the District Surveyor, but it was now claimed on behalf of that gentleman that, under section 78 of the London Building Act 1894, he was entitled to notice, and that the work must receive his approval. Otherwise, it was urged, serious accidents and loss of life might occur, and as a proof of the need of supervision it was pointed out that seventeen of the timbers found at the baths by the Surveyor when he visited them on October 16 were very defective. These had been previously used for the flooring of the baths. Mr. Dennis, for the defence, contended that the work in question was not "a structure" within the meaning of the Act, and cited *Venner* v. *Macdonell*, 66 Law J. Rep. Q.B. 273; L.R. (1897) 1 Q.B. 421, where it was held that in the case of seats erected at the Agricultural Hall in connection with the Military Tournament the District Surveyor was not entitled to notice. Mr. Plowden pointed out that that case had reference to seats and not to flooring. He held that the latter did come under section 78 of the Act, and that it was a matter with respect to which notice should have been given to the District Surveyor. He therefore fined the defendants 10*s.*, with two guineas costs.

MINUTES. I.

At the First General Meeting (Ordinary) of the Session 1902–1903, held Monday, 3rd November 1902. at 8 p.m., the President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair, with 56 Fellows (including 21 members of the Council), 63 Associates (including 2 members of the Council), 1 Hon. Fellow, 4 Hon. Associates, and numerous visitors, the Minutes of the Meeting held 23rd June [Journal, Vol. IX. p. 423] were taken as read and signed as correct.

The Hon. Secretary announced the decease of the following members:—viz. William Salway* [*F.*], George Truefitt* [*R.F.*], Charles France [*F.*], Emerich Steindl* [*Hon.Corr.M.*], and Eugène Müntz [*Hon.Corr.M.*]

The President announced that messages of condolence were being sent by the Council to the families of the Hon. Corresponding Members above referred to.

The following members attending for the first time since their election were formally admitted and signed the respective registers—viz. Arthur Harrison [*F.*], Frank Loughborough Pearson [*F.*], Walter Stephen Tucker [*A.*], James Ewing [*A.*], Edward Vincent King [*A.*], and Norman Thorp [*A.*].

The Secretary announced the results of the Statutory Examinations for the offices of District Surveyor and Building Surveyor held by the Institute during the month of October (see p. 14).

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* Obituary notices of those marked with an asterisk have already appeared in the Journal. A memoir of M. Eugène Müntz is kindly promised for the Journal by Monsieur Ch. Lucas [*Hon.Corr.M. Paris*].

The following candidates for membership, found by the Council to be eligible and qualified according to the Charter and By-laws, were recommended for election:— As FELLOWS, William Black (South Africa); Wilfred John Hardcastle; Leonard Vincent Hunt [*A.* 1888]; Leonard Martin; James Ransome [*A.* 1893]; Samuel Bridgman Russell [*A.* 1890]. As ASSOCIATES,* George Wilfred Allsop (*Special Examination*) (New Zealand); Chevalier Worby Beaumont (*Probationer* 1895, *Student* 1899); James Herbert Belfrage (*Probationer* 1897, *Student* 1901); Ralph Berrill (*Probationer* 1897, *Student* 1899); William Bevan (*Special Examination*); Harold Courtenay Bishop (*Probationer* 1896, *Student* 1898); Edwin Dace Brown (*Probationer* 1898, *Student* 1899); Reginald Percy Chamberlain (*Probationer* 1899, *Student* 1900); Henry Chapman (*Probationer* 1896, *Student* 1899); Alfred Rowland Conder (*Probationer* 1898, *Student* 1899); Edward Furness Marson Elms (*Probationer* 1897, *Student* 1901); Richard Fielding Farrar (*Special Examination*); John Harold Gibbons (*Probationer* 1895, *Student* 1898); Thomas Harry Gibbs (*Probationer* 1895, *Student* 1899); Thomas Sedgwick Gregson (*Probationer* 1895, *Student* 1897); Baxter Greig (*Probationer* 1897, *Student* 1901); Percy John Groom (*Probationer* 1893, *Student* 1896); Percival Joseph Haywood (*Probationer* 1895, *Student* 1899); William Herbert Hobday (*Probationer* 1898, *Student* 1900); Orton Holden (*Probationer* 1893, *Student* 1896) (Kettering); Henry Stringer Jardine (*Probationer* 1895, *Student* 1897); Ivan Calrow Kent (*Probationer* 1895, *Student* 1899) (Hailsham, Sussex); Reginald Guy Kirkby (*Special Examination*) (Sunderland); Henry Louis Emile Merille de Colleville (*Probationer* 1895, *Student* 1897, *Qualified for Assoc.* 1901) (Brighton); William James Nash (*Probationer* 1898, *Student* 1899) (Bournemouth); Charles Frederick Newcombe (*Probationer* 1892, *Student* 1897) (Newcastle-upon-Tyne); Percival Corney Newman (*Probationer* 1892, *Student* 1894); William Campbell Oman (*Probationer* 1895, *Student* 1899) (Johannesburg, South Africa); Edwin Osman Payne (*Probationer* 1898, *Student* 1900); Wilfred Stonehouse Payne (*Probationer* 1898, *Student* 1900); Richard McMinnies Roberts (*Probationer* 1897, *Student* 1899) (Warrington); Alexander Robert Robertson (*Probationer* 1898, *Student* 1899); Ernest Simm (*Probationer* 1893, *Student* 1896) (Osbaldestone, Lancs.); Spencer Smith (*Probationer* 1896, *Student* 1898) (Deal); John Swarbrick (*Probationer* 1897, *Student* 1900) (Manchester); Charles Frederick Ward (*Probationer* 1898, *Student* 1900); Lloyd Foster Ward (*Probationer* 1895, *Student* 1898) (Birmingham); Christopher William Frederick Wheeler (*Probationer* 1895, *Student* 1899) (Horsham); Thomas William Whipp (*Probationer* 1900, *Student* 1900) (Scarborough); Henry Armstrong Wilson (*Probationer* 1896, *Student* 1898) (Newcastle-upon-Tyne); Robert Gordon Wilson, jun. (*Probationer* 1897, *Student* 1900) (Aberdeen); Douglas Wood (*Probationer* 1898, *Student* 1899) (Newark-on-Trent); Willie Wrigley (*Probationer* 1896, *Student* 1898) (Wakefield). As HON. ASSOCIATE, George Mallows Freeman, K.C., J.P.

The President announced that application for alliance with the Royal Institute had been received from the Edinburgh Architectural Association, and that the Council recommended that the application be acceded to. Whereupon, on the motion of the President, it was

> Resolved, that the Royal Institute of British Architects, pursuant to the provisions of Section XVII. of the By-laws (Nos. 77–81), do admit the following Society to alliance with the Institute—viz. The Edinburgh Architectural Association.

The Opening Address of the Session having been delivered by the President, a Vote of Thanks, moved by Sir L. Alma-Tadema, R.A. [*H.F.*], and seconded by Mr. J. Macvicar Anderson, *Past President*, was carried by acclamation and briefly responded to.

The proceedings then closed and the Meeting terminated at 9.35 p.m.

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* Except where otherwise stated, all the candidates for Associateship passed the Qualifying Examination in July last.

THE BEGINNINGS OF GOTHIC ARCHITECTURE: NORMAN VAULTING IN ENGLAND.

By John Bilson [*F.*], F.S.A.

Mr. E. W. HUDSON'S Paper, printed in a recent number of this Journal,* seems to call for some reply from me. I scarcely think, however, that it would serve any useful purpose to follow him over the wide range of examples he mentions, or to discuss the authorities he quotes, especially as some of the latter wrote at a time when the state of knowledge on this subject was such as to make their opinions of little present value. I shall confine my remarks, therefore, to points which more immediately affect the question at issue.

Mr. Hudson is scarcely correct in thinking that I have advanced the claim of England "as against different provinces of France for the honour of having first produced ribbed vaults in Western Europe." My examination of the history of the earliest ribbed vaults in England has led me to the conclusion that these vaults show complete independence of any influence from the Ile-de-France, and that M. Lefèvre-Pontalis was wrong when he asserted "la nervure est une découverte essentiellement française" (*i.e.* of the Ile-de-France). I have stated my belief that, "*judging from the evidence hitherto presented*, the earliest of these Norman vaults are earlier in date than the period of the systematic development of the ribbed vault in the Ile-de-France,"* but I have nowhere advanced any claim on behalf of Normandy or England for priority over every other province of what is now France.

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* Journal R.I.B.A. IX. 509 *et seq.*

* Journal R.I.B.A. IX. 350.

Mr. Hudson speaks of my "amended claim," my "modified claim." The view for which I contended in my reply to M. de Lasteyrie is precisely that which I set forth in my Paper. Hitherto nothing that my critics (including Mr. Hudson) have said has given me any reason to modify my opinion.

Some passages in Mr. Hudson's Paper make me inclined to doubt whether his "further consideration of the Durham example" has included an examination of the church itself. If he had studied the actual work on the spot, he would scarcely need to be told that none of the vaults in question have shouldered keystones, but that in the vaults of the choir aisles, transept aisles, and nave aisles, and in the high vaults of the transepts and nave, the joints at the sides of the keys continue (more or less accurately) the lines of the sides of the ribs.* He would have discovered, too, that "the extreme difference of detail and ornament" † in the vaults, which he finds so difficult to explain if my dates are correct, exists equally in the walls of the church, as indeed we should naturally expect in work which covered a space of forty years. He would have found in the nave arcades, triforium, and clerestory, and in the nave aisle vaults, patterns of zigzags which are much more to the point than examples drawn from distant churches—unless he goes to the length of denying that the nave was built during Flambard's episcopate. Nor, I think, is anything beyond an examination of the nave vault itself required to disprove the absurd idea that it dates from the middle of the thirteenth century.

Mr. Hudson's references to "secular monks," to "Carileph's migration from Christchurch to Durham," and to "Bishop Roger's nave vault at Lincoln of *c.* 1123" are, I suppose, due to slips of the pen; ‡ but his mention, on the same page, of a pointed ribbed vault at Durham attributed to 1104 is a more serious mistake. The pointed form occurs, in the Durham vaults under discussion, only in the transverse arches of the nave vault, which I have attributed to 1128–1133, as indeed Mr. Hudson states in his next paragraph.

Mr. Hudson seems to ignore the consideration that, in the design of the choir and east side of the transepts of Durham, we have an essentially vaulted design, and I cannot gather from his Paper what opinion he has formed on the dates of the vaults of the aisles of the choir and transepts. With regard to the high vaults of the transepts and nave, Mr. Hudson suggests that after Flambard's death, in 1128, the clerestory walls of the nave and transepts were completed, and that temporary wood ceilings were erected, which were replaced by the existing vaults before Bishop Pudsey's accession in 1153.* I have already pointed out the difficulties which must be met before such a suggestion can be entertained. The theory is impossible so far as the clerestory walls of the north transept and nave are concerned, for the setting out of the clerestory windows proves (as I have shown) † that the clerestories were built with the existing vaults. Mr. Hudson does not attempt to reconcile his theory with the differences in the detail of the vaults of the north transept, south transept, and nave, although elsewhere in his Paper he emphasises these differences. The plain sense of the passage which tells us that Flambard built the nave *usque ad testudinem* (whether *testudo* be taken to mean ceiling or vault) is ignored on account of the assumed necessity of putting this vault some twenty years later than the date to which I have attributed it. Symeon's continuator tells us that in the time of Geoffrey Rufus (1133–1140) the chapter-house was finished (*consummatum est*); ‡ but if we are to accept Mr. Hudson's theory, this finishing cannot have included the vault, which he admits to be later than the nave vault. The chapter-house vault in that case must also have been a subsequent addition. I must confess that I can see no justification for thus ignoring the statements of a contemporary chronicler without a particle of evidence drawn from the structure itself.

When Canon Greenwell first aroused my interest in this subject some years ago, I was hampered by the theories of "authorities" which still disturb my critics. A careful and prolonged study of the building, with the assistance of the documentary evidence and a study of many other examples of early vaulted construction in England, led me to the conclusions set forth in my Paper. If my dating of these vaults is wrong, by all means let me be put right. I desire only to arrive at the truth. But I must again point out that, if my critics wish to disprove my story, they are bound to substitute for it some intelligible history of the church and its vaults which is based on an analysis of the evidence afforded by the structure itself. The vaults are *there*, and must be explained.

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* I have already stated this (JOURNAL R.I.B.A. VI. 299, and note §).

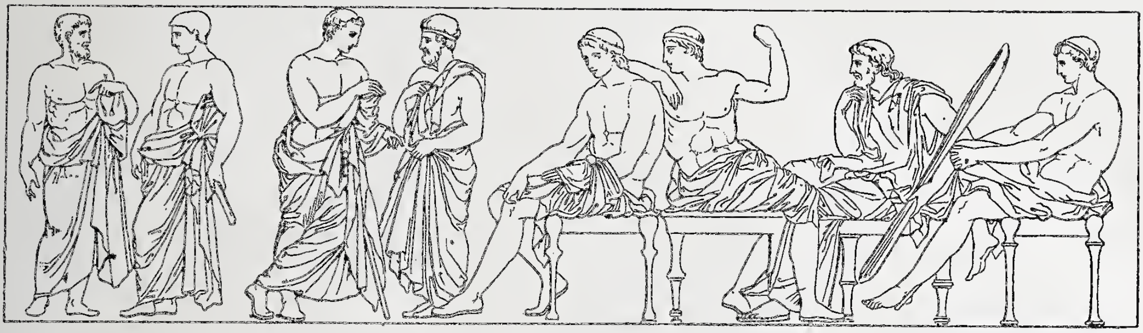
† JOURNAL R.I.B.A. IX. 512.

‡ *Ibid.* IX. 513.

* JOURNAL R.I.B.A. IX. 517.

† *Ibid.* VI. 348.

‡ *Ibid.* VI. 318, note *.



ON THE ORIGIN AND CONSTRUCTION OF THE IONIC VOLUTE.

By F. C. Penrose, F.R.S., Litt.D., D.C.L. [*F.*].

Read before the Royal Institute of British Architects, Monday, 17th November 1902.

MUCH has been written on the subject, and several methods have been proposed for the construction of the Ionic volute by means of finding centres for quadrants of circles which may give some approximation to the appearance of the true figure of the Greek originals, none of them very successful. That of Goldman seems to be the best, and, indeed, if compared only with Roman examples, may almost be allowed to be good; but it fails altogether to give the proper proportional expansion of the spaces between the lines; nor do the four jumps in each convolution at all represent the beauty of the continuous gradation of Greek originals.

The origin of the volute has been sought for in Assyria, Egypt, and other sources; but I believe the scheme I am about to explain this evening, which derives it from Greece itself, must be the right one, as it enables the exact figure of any true Greek example to be reproduced.

We find constantly in archaic Greek work in various places, and particularly in the decorations of the Mycenæan period, the form of scroll shown in fig. 1 [p. 22], in which every convolution of the spiral extends from the centre by equal intervals. A form similar to this appears to have been used in carved work on capitals at Persepolis, and may have been actually tried in Greece itself, but, if so, would soon have been found monotonous and intolerable to eyes acquainted with the shape of the shell of the nautilus or the ammonite and some other natural forms.

The decorative scroll above referred to had no doubt been formed mechanically, as can easily be done by unwinding a string from a cylinder (the mathematical name for this figure is the involute of the circle, and it may be convenient to speak of it under that name). The question would, as I have supposed, arise, How could a spiral having the character of the ammonite be produced?

If now the operator draws upon wood—or some other suitable material—the involute scroll, such as he has been accustomed to, and by shallow carving or otherwise raises the edges a little to form a helix, so as to allow a string to be wound round those edges, and then to be unwound over a flat surface with a marker at the extremity of the string, he would have produced the expanding spiral he was in search of. This figure, as I shall show further on, received an improvement in the hands of the Athenian architects, but it sufficed for many other excellent examples elsewhere. It does not indeed give the true figure of the ammonite, which Nature forms on the principle of the equiangular spiral [see fig. 2], which is

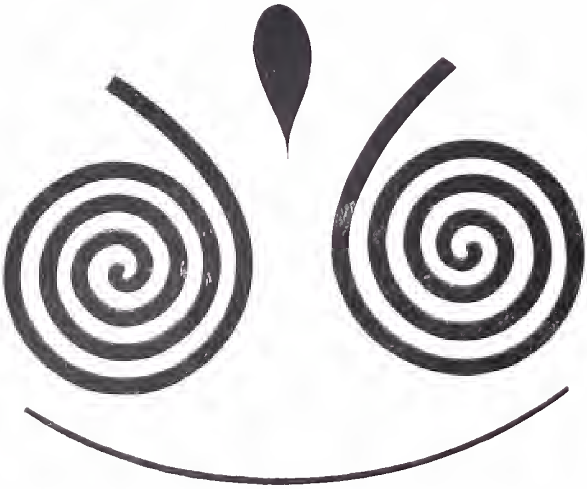


FIG. 1.—MYCENÆAN DECORATION.

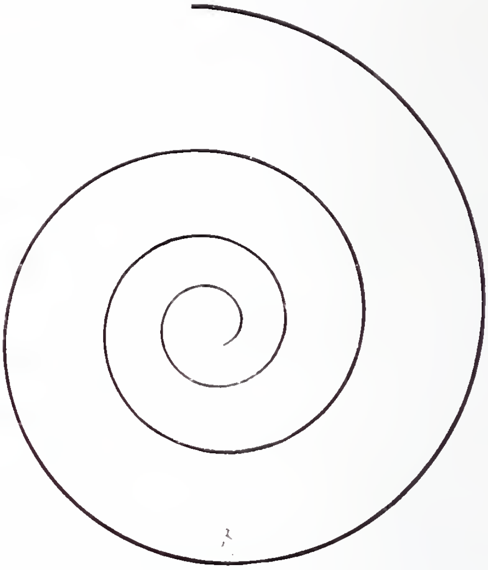


FIG. 2.—EQUIANGULAR SPIRAL, DRAWN MECHANICALLY.

drawn by an instrument exhibited by me in the Great Exhibition of 1851, and which I have called the helicograph; but the involute method has all the requisites of proportional

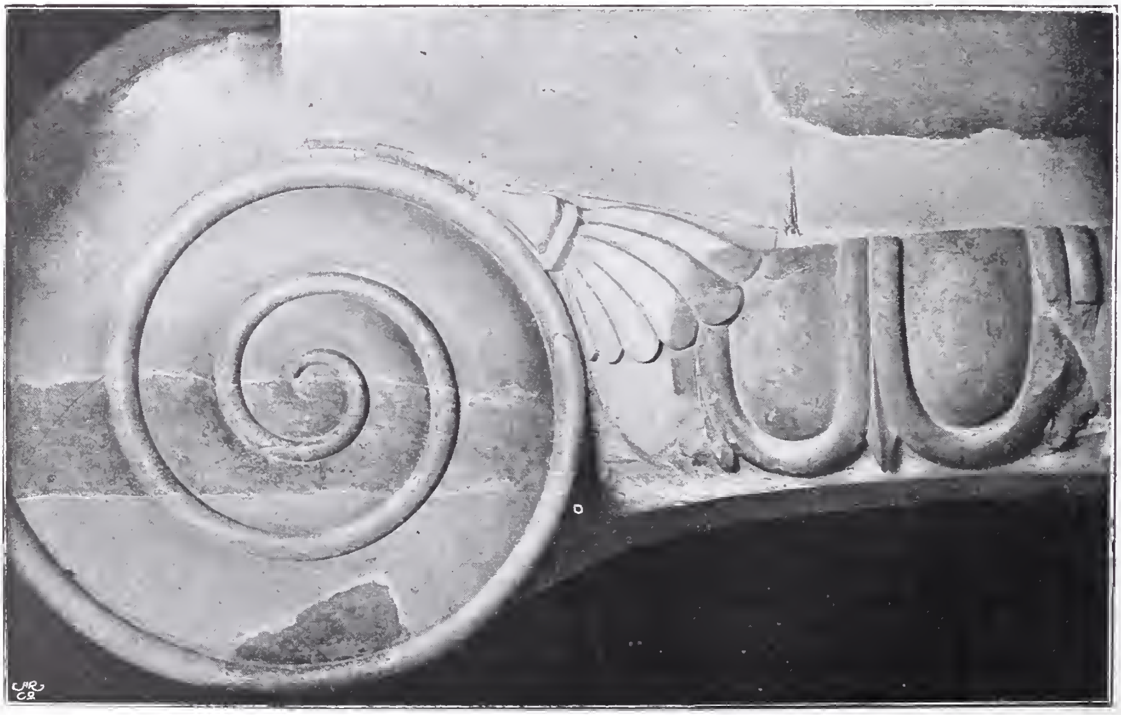


FIG. 3.—ARCHAIC EPHESIAN CAPITAL RESTORED. BRITISH MUSEUM.
The dark parts are the original fragments.

expansion and perfect variation of curvature at every point, and, what is important for our present inquiry, coincides perfectly with Greek volutes.

Mr. Banister Fletcher informs me of a volute produced by unwinding a string from a whelk-shell. By this means the equiangular spiral could be produced. This form, however, though greatly superior to Goldman's volute, would not nearly coincide with the Greek examples, nor have so much variety of curvature.

I give an example from Ephesus * [fig. 3], the capital of the early Temple of Diana introduced to us by Dr. Murray a few years ago,† and again referred to in a Paper read before the Institute last January,‡ which is of peculiar interest in this inquiry. In all the later examples known to me the two central convolutions of the spiral, or nearly so, are interrupted and concealed by the circle which forms the eye of the volute. In this case, however, the curve which would be evolved from the helix, such as I have mentioned above, is allowed to extend from the very central origin of the volute up to its junction with the abacus. Fig. 4 is the same spiral drawn from calculated points, as will be further described later on.

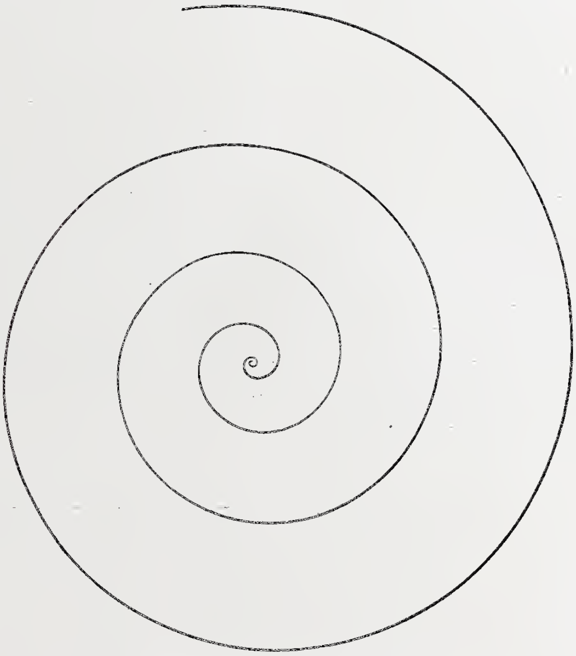


FIG. 4.—ARCHAIC EPHESIAN CAPITAL, THEORETICAL CURVE.

The darker parts of the capital [fig. 3] are original; the remainder is as it has been restored, and well restored, by Mr. Pinker, the clever head mason of the British Museum; but it is only the central part which is here to be considered as authentic. Fortunately this part contains the central origin, and also enables a straight line to be drawn through it to the circumference on both sides; this enables a calculation to be made to find a helix on the involute principle, and this, when worked out, is found to agree not only with the given points on the circumference, but corresponds with the inner convolutions also, and can therefore be extended to the whole of the volute as given in fig. 4. The difference between this and the restored parts is not great. This correspondence clearly shows that the method of the involute spiral was that which was used by the architect employed by Crœsus. In this, the archaic cap, the raised moulding which marks the volute extends to within about an inch of the point where the spiral would commence, and the remainder is shown by a groove cut in the marble almost to the absolute starting-point, which I shall hereafter call the origin. It is a large volute about 33 inches across.

The volute of the later temple at Ephesus has exactly the same curvature, almost the only difference being in the surface moulding and the circular eye which occupies its centre. Those at Priene and the Mausoleum can be formed with involute helices made in the same manner. In by far the majority of the examples known to me the eye of the volute was a

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* At the Meeting a second example was exhibited—a drawing of a capital from the later temple in the days of Alexander, restored after the fire.

† *The Sculptured Columns of the Temple of Diana at Ephesus*, JOURNAL R.I.B.A., Vol. III., 3rd ser. [1895–96], at p. 53.

‡ *Two Ionic Capitals in the British Museum, ib.* Vol. IX. [1901–2], at p. 101.

separate piece from the main mass of the capital, and was formed by some kind of boss of marble or sometimes of metal, inserted into a circular hole prepared for it, centred very nearly on the place of the pivot of the helix, and always of sufficient diameter to receive it. Such an arrangement would have had obvious convenience for fixing the helix, but would not have been indispensable, and there are a few examples in which it does not occur.

The volutes in all the examples in Asia Minor were probably described by means of helices similar to that mentioned above. But the more critical Athenians demanded greater variety than that spiral so used could supply, and gave to their volutes additional expansion in the exterior convolution; still, however, working by means of the involute form, but treated in the manner I propose to show presently. This applies to the Propylæa, to the three orders of different size in the Erechtheum, to the temple of Nike, of which Dr. Murray also gave us a description in January last—viz. of a broken but sufficient example in the British Museum. It was also used in the temple on the Ilyssus, now lost, but carefully recorded by Stuart; and in the provincial temple at Bassæ, where, however, the Athenian architect Ictinus was employed. With the exception of this variation in the exterior convolution in Athenian structures the same general scheme seems to have been employed in all true Greek examples, and the only liberty of choice given to the designers lay in the proportioning of the width of the volute to the upper diameter of the column, and in that of the interval between the convolutions of the generating helix and in the size of the eye compared with that of the volute. These elements would have some influence upon the number of convolutions to be used, which vary in the cases I have examined from four (that is, measured from the origin) at Priene, to two and a quarter in the case of the Erechtheum. The intervals of the helix will determine all other variations.

VARIATIONS IN THE ABOVE-MENTIONED ELEMENTS AS FOUND IN CERTAIN EXAMPLES.

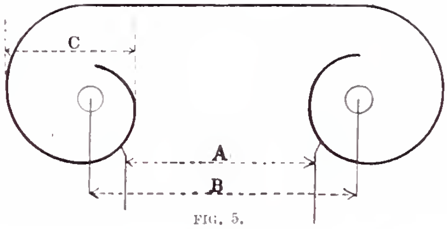


FIG. 5.

	Comparison of Upper Diameter of Column with Distance between Eyes of Volute.	Width of Volute compared with the same.	Intervals of Generating Helix with the same.
	A ÷ B	C ÷ A	
Ephesus, archaic temple	$\frac{9}{14}$ = 0·64	$\frac{5}{7}$ = 0·72	$\frac{1}{148}$ = 0·0068
Ephesus, latest temple	$\frac{7}{8}$ = ·88	$\frac{6}{11}$ = ·55	$\frac{1}{188}$ = ·0053
Mausoleum	$\frac{9}{10}$ = ·81		$\frac{1}{150}$ = ·0067
Priene	$\frac{6}{7}$ = ·86	$\frac{6}{13}$ = ·46	$\frac{1}{300}$ = ·0033
Athens, Erechtheum, E. Portico. (N.B. Three varieties of size almost identical in proportion)	$\frac{13}{14}$ = ·93	$\frac{8}{13}$ = ·61	$\frac{1}{154}$ = ·0065
The Propylæa	$\frac{6}{7}$ = ·86	$\frac{8}{13}$ = ·61	$\frac{1}{176}$ = ·0057
The temple on the Ilyssus, from Stuart .	$\frac{7}{8}$ = ·88	$\frac{8}{14}$ = ·57	$\frac{1}{182}$ = ·0055

The two different descriptions of volute may be called the Asiatic and the Attic.

TO FORM THE HELIX FOR DESCRIBING THE GREEK VOLUTE.

First, the Asiatic form of spiral [see Diagram, fig. 6].

It should be premised that the helix about to be described is an approximate form, and that it relies on the first two convolutions not being required. For those subsequent, the approximation is so close as to be almost identical with the theoretical curve.

Having settled what the interval is to be and how many convolutions are to be shown, and taking first the right-hand volute, begin with a horizontal straight line, A B, passing through the origin, O. From O measure four or five intervals towards the right, and number them 2, 4, 6, 8, 10, and on the left hand of O measure first one-half interval and afterwards four complete intervals and number them 1, 3, 5, 7, 9. Through O draw a vertical straight line, and with centre O draw a small circle, radius $\frac{1}{4}$ interval, and mark the points where this circle intersects the vertical and horizontal lines as shown in the diagram, *a b c d*.

As we are supposing the two innermost convolutions of the volute to be concealed by the circular eye, we need not take any notice of points which bear numbers less than four. Should, however, the two interior convolutions be desired, a different method would be required for these—that is, as far as No. 4. This will be described further on.

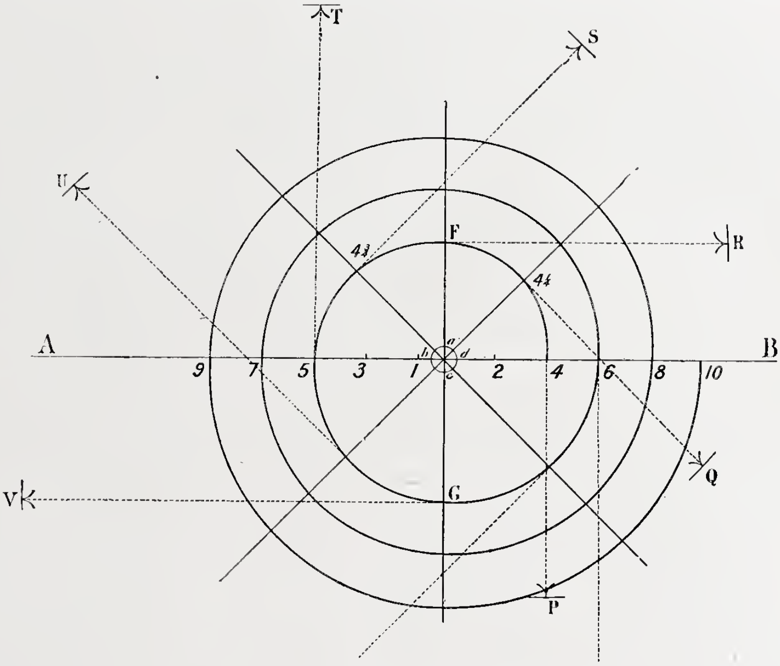


FIG. 6.—ASIATIC FORM OF SPIRAL. INVOLUTE HELIX.

Then, proceeding—With centre *a* and distance *a* 4, describe the arc 4 F and follow from centre *b* with an arc which will arrive at 5, then from centre *c* draw the arc 5 G, and so on from centres *d a b*, &c., in order. It may sometimes be necessary for a particular case (the E. portico Erechtheum is one of them) to turn the helix partly round, so, for instance, as to make the straight line, O F, horizontal instead of vertical. At the junction of the spiral unwound from the helix with the circumference of the eye it would almost always require a slight adjustment to fit the two together; but this would not have been beyond the capacity of a Greek mason, nor would it be of a competent English workman.

For the left-hand volute simply reverse the order of the figure and proceed in a similar manner.

Before describing further the employment of the helix it will be well to give a table of calculated measurements of the involute spiral.

To show on the diagram the places determined by the table, radiating straight lines are drawn through the origin at 45° distance from one another, so as to divide the circumference into eight equal segments.

The girth of the helix reckoned from the origin equals at every point the radius of the volute measured at that point—namely, where the curve of the helix intersects one of the radiating lines just mentioned, as the string being unwound arrives there; such as the dotted lines drawn in the direction 4 P from 4 4′Q, from $4\frac{1}{4}$, &c., and following on for the next convolution with similar lines from 6, $6\frac{1}{4}$, &c., all which lines are drawn at right angles to the square and diagonal setting-out lines. The extremity of these lines, when correctly measured, give points on the volute and arc, as above stated, themselves radii of its curvature at those points. Their length may be measured off from the table in proper proportion, or still better, from a scale of intervals.

In the table given below it will be convenient to use the mathematical term π for the semi-circumference of the circle, and by that notation for the right-hand volute the even numbers will all fall towards the right hand as given in the diagram; the reverse taking place when the left-hand volute is in question. The measure of a full convolution of the helix is given in the table against 2π and so on.

Values of π.	Radius of Volute in Terms of Interval.	Values of π.	Radius of Volute in Terms of Interval.	Values of π.	Radius of Volute in Terms of Interval.
0	0	$3\ \pi + \frac{1}{2}$	9·62	$7\ \pi$	38·48
$\frac{1}{4}\pi$	·05	$\pi + \frac{3}{4}$	11·04	$\pi + \frac{1}{4}$	41·28
$\frac{1}{2}\pi$	·20	$4\ \pi$	12·57	$\pi + \frac{1}{2}$	44·18
$\frac{3}{4}\pi$	·44	$\pi + \frac{1}{4}$	14·19	$\pi + \frac{3}{4}$	47·17
$1\ \pi$	·79	$\pi + \frac{1}{2}$	15·90	$8\ \pi$	50·27
$\pi + \frac{1}{4}$	1·22	$\pi + \frac{3}{4}$	17·71	$\pi + \frac{1}{4}$	53·46
$\pi + \frac{1}{2}$	1·77	$5\ \pi$	19·63	$\pi + \frac{1}{2}$	56·75
$\pi + \frac{3}{4}$	2·40	$\pi + \frac{1}{4}$	21·64	$\pi + \frac{3}{4}$	60·14
$2\ \pi$	3·14	$\pi + \frac{1}{2}$	23·76	$9\ \pi$	63·26
$\pi + \frac{1}{4}$	3·98	$\pi + \frac{3}{4}$	25·97	$\pi + \frac{1}{4}$	67·20
$\pi + \frac{1}{2}$	4·91	$6\ \pi$	28·27	$\pi + \frac{1}{2}$	70·88
$\pi + \frac{3}{4}$	5·94	$\pi + \frac{1}{4}$	30·67	$\pi + \frac{3}{4}$	74·66
$3\ \pi$	7·07	$\pi + \frac{1}{2}$	33·17	$10\ \pi$	78·54
$\pi + \frac{1}{4}$	8·30	$\pi + \frac{3}{4}$	35·78		

If a helix with raised edges is made, which is not difficult, so that a string may be unwound from it, the use to be made of the table is to give the true measure of the initial or final point, as well as for a general check. If, for instance, it is started from the point numbered 4, the marker at the end of the string should be drawn out to 12·57 of the scale of intervals. If a string is not used, the arcs between the places given by the table may be supplied very accurately by following with the compasses at short distances apart along the curve of the helix.

We may now consider the Attic variation. This does not in any way interfere with what has been already explained; but instead of using that contrivance as far as No. 9 or beyond it, it arrests it at some point between 6 and 7, as in the following diagram [see fig. 7], and substitutes for the rest of the Asiatic form of helix a circle placed tangentially, so that there may be no break in the curvature as the unwound string follows the circumference of this circle, of which the measure is equal to the distance required to complete the design. Unlike the subsequent convolutions of the involute, the first is a curve of great variety and beauty, and no other could have had such complete harmony with the lines with which it was associated.

As an example of this operation, and taking the case of the E. portico of the Erechtheum. The involute helix as hitherto described is arrested at *h*, which gives 3¼ convolutions reckoned from the origin. *h e* is the radius of curvature at the point *e*. Had the Asiatic method been used and the unwinding from the original helix been followed out, the summit of the volute would have been at *t*, but it was desired that it should finish at T. To effect this, draw *h* N at right angles to the tangent to the helix at *h*, *h* N being the diameter of a circle of which the circumference is equal to *e* T. (The line *h* N will fall a little below the origin.) This circle is now placed so as to have a common tangent with the original helix at *h*, and, the string having been sufficiently extended, it may be unwound from the circumference of this circle from *h* through N, back to *h* again, at which point the marker has traced the desired contour as far as T, and has given to the volute the desired expansion. The other two varieties in the capitals of the Erechtheum are similar.

In the example of the Propylæa, the only difference is that the point H would be found at 3½ convolutions from the origin. In the temple on the Ilyssus, and that of Nike Apteros, as well as of Bassæ, the method is quite analogous. The unwinding of the string commencing at *e* is shown by the dotted lines, fig. 7, viz. *a*′, *b*′, &c. The curve may be drawn with practical accuracy by compasses following the circumference of the generating circle at small distances apart.

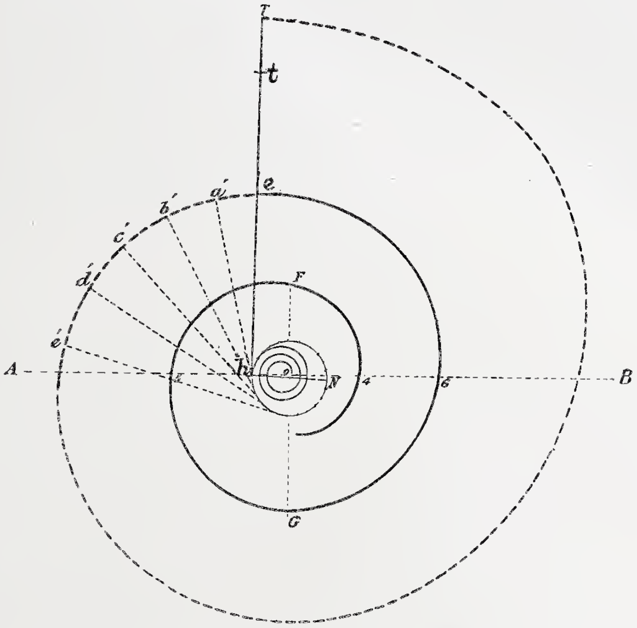


FIG. 7.—EXPLANATION OF ATTIC HELIX.

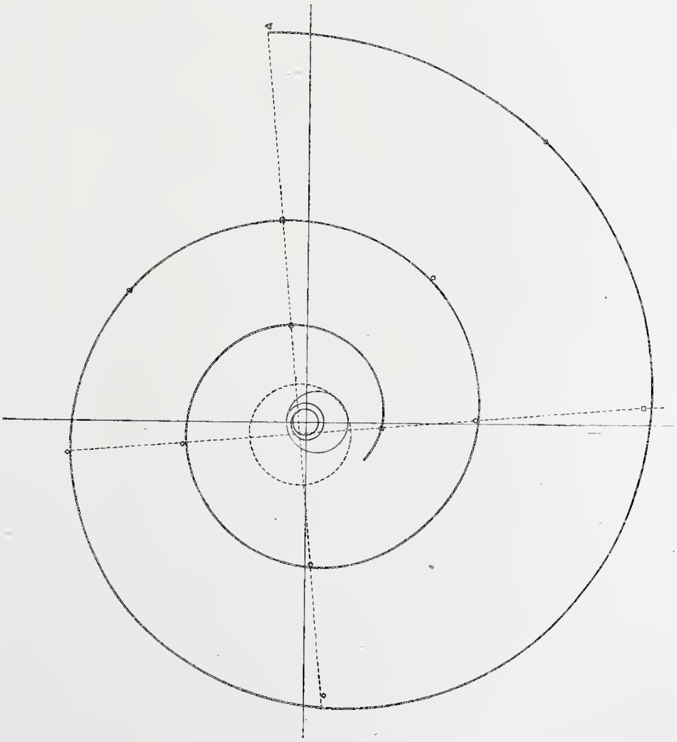


FIG. 8.—EAST PORTICO, ERECHTHEUM. THEORETICAL CURVE FROM CALCULATION.

I may perhaps be asked how the interval belonging to any particular case is to be discovered. This, with the help of the table, is not difficult. It may be shown that the extreme points in a cross-level section of the Asiatic volutes measure about 15 of the numbers marked π on the table = 88·75 intervals across, and in the Attic variety 11 of those numbers = 58·11 intervals in the breadth of the penultimate convolution, also approximately; also the centre of the eye may be used as a guide, although it may not exactly coincide with the origin. With the interval so arrived at draw the spiral and trace it. Then compare the tracing with measurements laid down from the original, turning it round some centre near that of the eye. If it fits exactly (as Euclid would have said), the thing is done. If not, add or subtract and mark on the tracing, say 10 per cent. to or from the spiral's measurements previously tried, and the nearest agreement will soon be found.

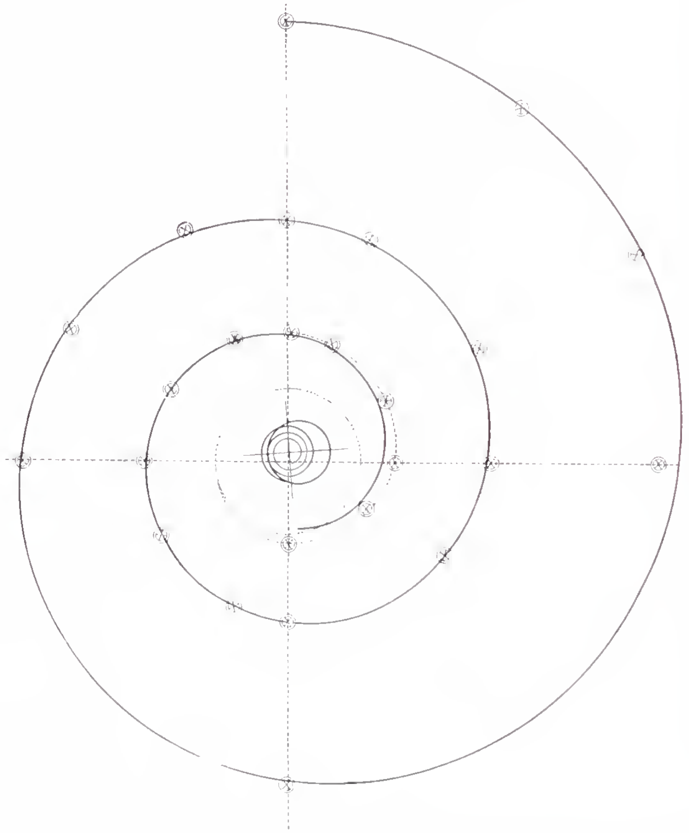


FIG. 9.—PROPYLÆA, ATHENS. THEORETICAL CURVE WITH MEASUREMENTS OR STARS.

The example fig. 8 [p. 27] has been worked from data given by the table, the interval being 0·15 inches, and its agreement with the original, namely the E. portico Erechtheum, is shown by the stars on the full-sized diagram laid down from the measurements given by Stuart, in the accuracy of which I have the greatest confidence. There is in the British Museum, among the Elgin Marbles, one of these capitals. It was formerly placed on the floor line of the gallery, but is now out of reach, being mounted on a portion of the shaft of the column. Whilst it was accessible I measured it and took an impression of it on paper, and found by comparison that Stuart's measurements of the volute were thoroughly reliable.

The example [fig. 9] from the Propylæa is compared with measurements taken by my friend and companion at Athens, Mr. T. J. Willson, whom I know to be a man of scrupulous accuracy. The capital from which it was measured in 1846 was well preserved for more than two-thirds of its contour. On a more recent visit I could only find a much more mutilated specimen. So far, however, as it went, it agreed with Mr. Willson's record. The stars [⊛] here also denote the deviations between the measurements and the curve as calculated on the involute principle. In this volute is found the same modification of the exterior convolution as was applied to that from the Erechtheum. The interval used for the Propylæa is 0·194 inches. The eye is not disconnected from the rest of the work in the more usual manner, and some other contrivance must have been used for fixing the helix. Its firm clamping would have been of consequence, as it would then be available for the mason's guidance until the line he was engaged upon was complete.

Fig. 7, though not to scale, may be used to show how the first two convolutions may be drawn correctly. The dotted vertical line F G and the points 4, 5, &c. are supposed to occupy the same places that they have in fig. 6. The generating circle from which the involute is to be unwound is supposed to be centred on the origin, and its circumference to be one interval. The curve commences at the upper intersection of this circle with F G, and for the right-hand volute the string is unwound in the direction F, 5, G, with of course reversed motion for the other volute. Obviously, if the two first convolutions were thus drawn, the unwinding could be continued to complete the helix as far as might be wanted, but there would be no practical difference after the second from the approximate method I have given above. N.B. The diameter of the generating circle (or rather cylinder), being less than the third part of one interval, would be very small—in the case of the Erechtheum 0·048 in., say, $\frac{1}{20}$ inch.

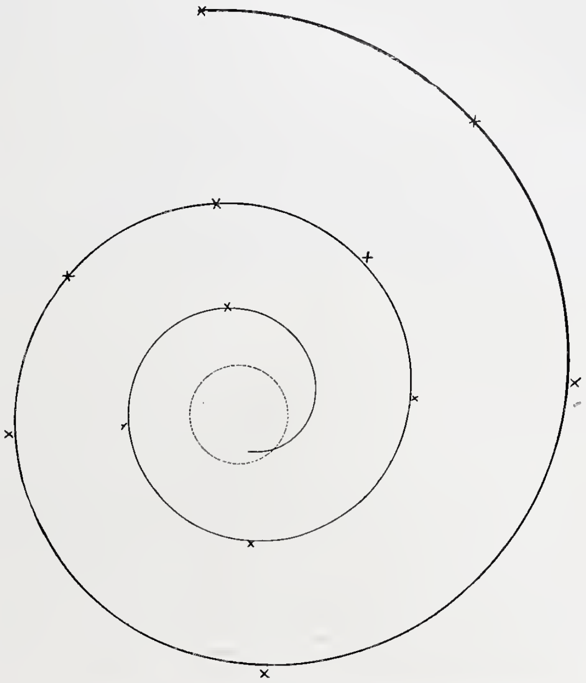


FIG. 10.—EAST PORTICO, ERECHTHEUM. VOLUTE DRAWN MECHANICALLY.

In contriving a working helix—that is, one from which a string may be unwound so as to produce the volute, which would, as it seems to me, be quite worth while if a Greek volute has to be carved—there is a plan easy of execution, and which in respect to accuracy is very little inferior to the preceding approximating plan, demanding, however, also the suppression of the two interior convolutions. It is the plan upon which the working models I submit were formed. I submit also a drawing of the Erechtheum cap drawn by means of one of them, with stars showing its comparison with the measurements [fig. 10].

Two flat cones here shown on plan only—viz. A B and C D [fig. 11]—of a close-grained wood were first shaped on a turning-lathe and then formed into a series of flat concentric steps; the width of the *tread*, if I may so call it, in each being equal to one interval, the *riser* being raised just sufficiently for the winding of a fine string. Before the steps were turned the cones were cut in two, the section accurately passing through the centre.

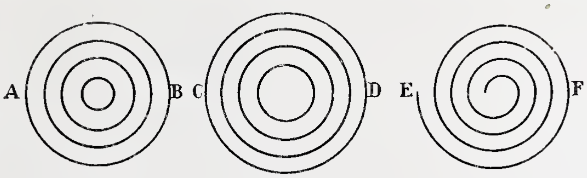


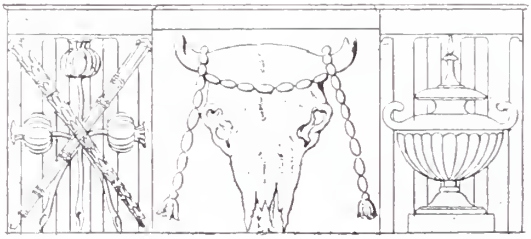
FIG. 11.

It will be observed that one of the cones as drawn above commences at the top with a space exceeding that in the other by one interval. Each of them after being bisected was reunited with glue, a thin film of paper being placed between them. What I have called the steps were then turned. Afterwards each cone was put into tepid water, separated, and then reunited, but alternately; the segments of the cone A B being joined to those of C D as in E F, and thus two helices were formed of contrary curvature and suitable for the right and left volutes of the same capital—that is, of the Asiatic form. The string is then fixed near the point marked E and wound in the direction of the origin. At this point a small hole is pierced occupying the axis of the cone to serve as a pivot. To one of them the Attic form was added by substituting a circle for the penultimate convolution of the helix in the manner detailed above. Fig. 10 was drawn with this instrument.

I have been speaking as yet only of the extreme contour of the volute. To get the lines of the face mouldings it is only necessary to unclamp the helix, to turn it round as much as may be required on its pivot which occupies the origin, to reclamp and unwind again, to obtain all the face mouldings that could be wanted for an Asiatic volute, and for one of the Attic variety all that it has in common with the Asiatic.

To show the comparison between the theoretical curves and the measurements in the examples from the Propylæa and the Erechtheum, it may be well that I should state what they actually amount to. Taking first the example from the Propylæa [fig. 9]. In the outer convolution there are eleven comparisons, but I exclude one of them as quite unconformable, being more than three times that of any of the other differences, and as occurring where the capital was very liable to accident. The mean error of the other ten, balancing those in excess against those in defect, amounts to one-hundredth of an inch; and in the next convolution (after which the accommodation to the eye of the volute becomes sensible) the maximum error, which greatly exceeds any other, is about the fifth part of an inch. Including this, the mean error is one-nineteenth. And this—that is, the mean error—would have vanished altogether if the interval used in the calculation had been ·197 instead of ·194.

In the Erechtheum example [fig. 8], in the outer convolution, there is amongst six comparisons one error which is twice as large as any of the others, and amounts to about three-tenths of an inch, but including this the mean error is one-fortieth of an inch. In the next convolution and one-fourth of one, among eight comparisons the maximum error is one-tenth of an inch, and the mean one-seventieth.



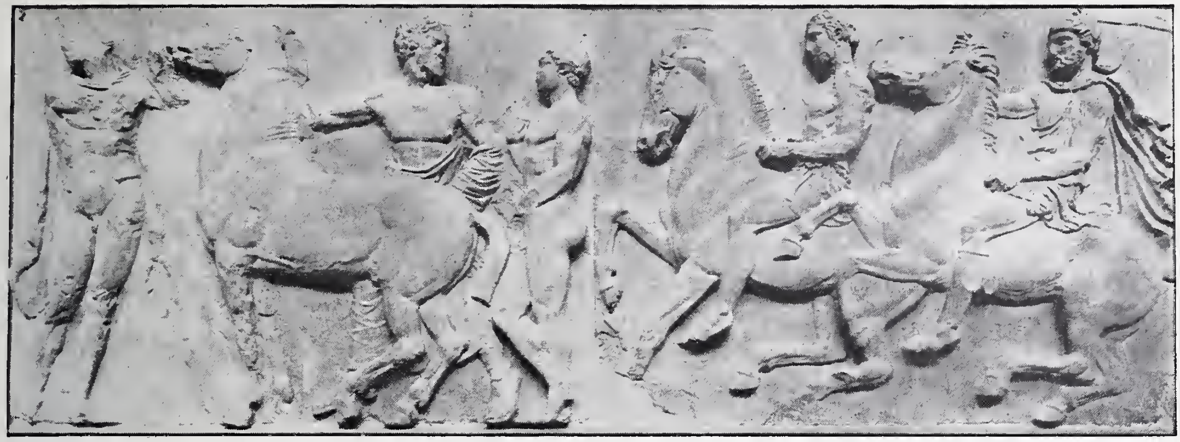


Photo. by W. A. Mansell Co

A FRAGMENT OF THE PARTHENON FRIEZE.

By A. S. Murray, LL.D., F.S.A. [*H.A.*],

Keeper of Greek and Roman Antiquities in the British Museum.

Read before the Royal Institute of British Architects, Monday, 17th November 1902.

A YEAR or more ago a clergyman sent me a copy of a Greek inscription which he had seen in a rockery in Essex. It turned out to be an inscription which had figured often in books on Greek epigraphy, but had been missing since about 1771, in which year it was published in the *Archæologia of the Society of Antiquaries* (vol. ii. p. 216). The story was that Stuart when in Athens, preparing the drawings for his famous book, had picked up this inscribed piece of marble, and given it with some fragments of bas-relief to a ship-captain to take to Smyrna, where he intended to get it on his way home. Something happened, we are not told what, and when next Stuart saw the marble it was in the hands of a Mr. Jones, of Finchley, who had received the inscription and the fragments of bas-relief from the captain of a ship in his Majesty's Navy. How long the inscription remained there we do not know; but just about then there was a well known antiquary, Thos. Astle, much interested in ancient alphabets, and presumably the sort of person who would like to possess the beautifully inscribed stone. At all events, it was on an estate in Essex once belonging to Thos. Astle, that the inscription has lately been recognised. In itself the inscription is of no little historical interest, being in fact part of a monument erected in Athens in honour of volunteers from Cleonæ who had fought on the side of the Athenians (457 B.C.) in the battle of Tanagra against the Lacedæmonians and Eubœans (Boeckh, C.I.Gr. 166). The monument was erected in the Cerameicos at Athens, and was there seen by Pausanias (I. 29, 5 and 7) in the second century A.D. Stuart states that he had found the inscription near what he calls the ruins of the Stoa Pœcile, or Painted Porch. In more recent years some additional fragments have been picked up in Athens.

When the copy was sent me I wrote to say that an important part of the inscription was still missing. Since then, however, a son of the present owner of the estate has found that part in digging round the rockery. Both pieces have now been moved into the house. The larger piece has a bleached appearance from long exposure to Essex weather, but the fragment lately dug up looks as if it might have been brought from Athens the other day; from which we may infer that it had been carelessly broken off, and judiciously buried out of sight when the slab was being set up in the rockery, and before it had yet lost its characteristic Athenian colour. So much for the inscription.

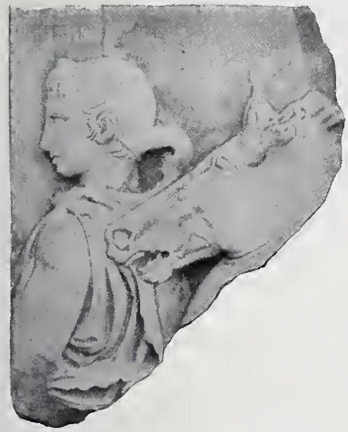
But the attractions of that Essex garden do not end here. Two or three months ago the wife of the owner of the estate was much surprised when her gardener, in digging beside the old rockery, came upon what has turned out to be a fragment of the Parthenon frieze. It was first identified as such by a young medical student, Mr. Alison Glover, who had visited Athens a year or two ago, and was familiar with the style of the sculpture. He called upon me with a photograph which enabled us, together with the exact dimensions, to determine at once the slab in the Museum from which it had been broken off. It is a clean break, as I have since ascertained.

Though found under the earth the fragment must have been long exposed to severe English weather. The whole surface of the marble is granulated, as if it had been treated by some strong acid. Down the face of the young horseman the rain has driven furrows, which take away some of its charms. Still the recovery of so large and so beautiful a piece of the Parthenon frieze is a matter for no small rejoicing.

So far there is no record of this fragment. It does not appear in any drawings made previous to Lord Elgin's time. It had fallen before then, most likely during the gunpowder explosion within the Parthenon in the seventeenth century. We admire the excessively fine joints of the frieze, and forget that the want of any play between the slabs was sure to be a source of mischief should the building be shaken or subside in its foundations. Those who are familiar with Athens will remember how the Propylæa look as if they had stood a siege, so many of the corners of the marble blocks have been burst off. It is the same with the walls of the Erechtheum and the Parthenon. And no doubt the reason why so many of the corners of the frieze are wanting is this excessive fineness of the joints. One wonders whether there may not be some more of them in English gardens, and whether it might not be of some advantage if the Hellenic Society or the Antiquaries were to start a commission of inquiry.

In the absence of any definite record, but considering the facts that Mr. Jones of Finchley possessed several fragments of bas-relief, as well as the inscription, and that Stuart had sent home some such fragments with it, I am inclined to think that this fragment of the frieze had reached Essex along with the Greek inscription, and had been sent home with it by Stuart. I should add that the Thos. Astle of whom we have been speaking was in his time a trustee of the British Museum. But that was in the pre-Elgin days, when the Towneley marbles were regarded by Dilettanti as the perfection of ancient sculpture. A fragment of the Parthenon frieze would have counted for very little then.

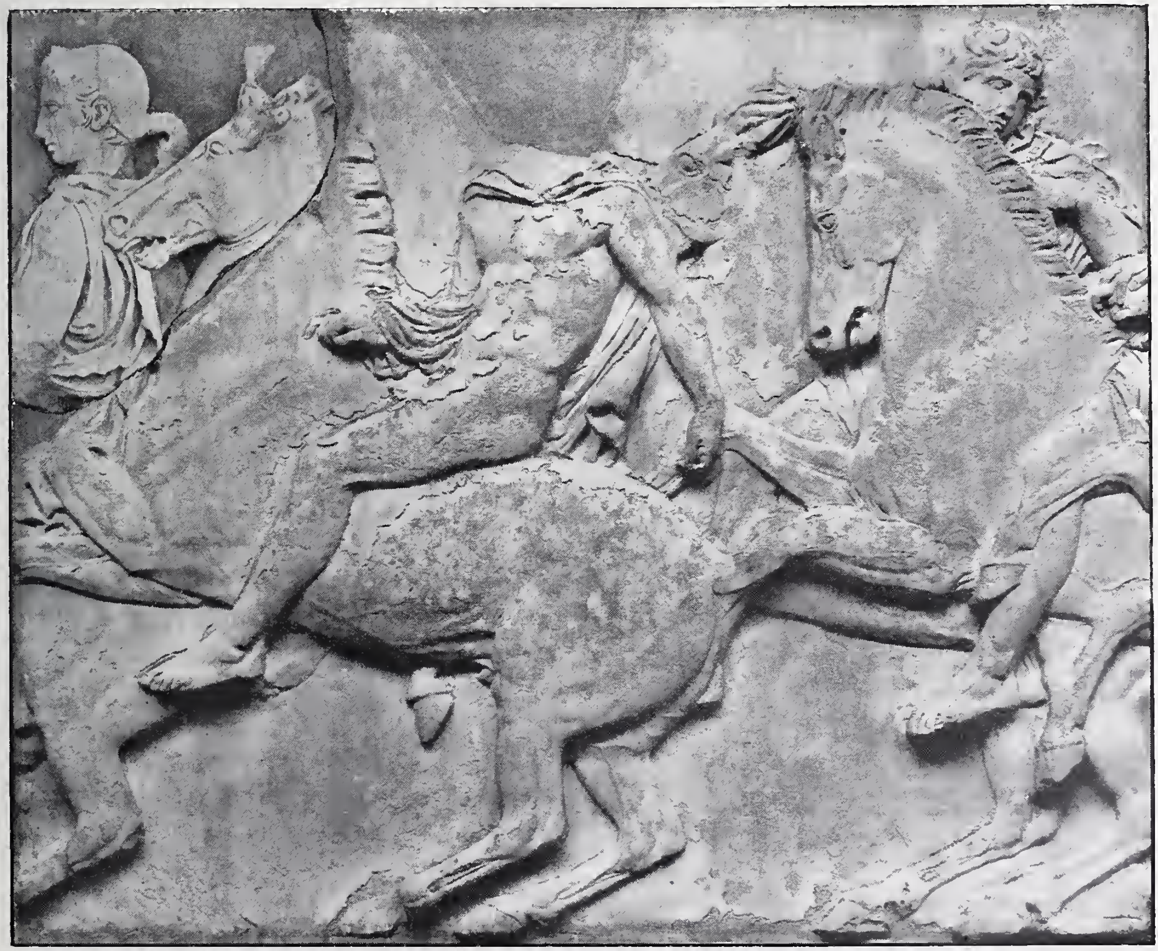
The slab to which the fragment belongs forms a part of the cavalcade of young Athenians who rode in the Panathenaic procession through the streets of Athens every fifth year. You will remember the long line of horsemen, sometimes crowding on each other three deep, at other times opening out, with intervals of haste and leisure, which carry the spectator onwards with a gentle yet irresistible force. And as to the artistic gifts which the sculptor has lavished on some of the more complex groups, that is a matter of universal admiration. In the simpler groups he is content that man and horse shall be simply types of their kind —but beautiful types. Here and there we see a young horseman turning round in his seat, as in the slab in question, to which I have here added the Essex fragment from a photograph. It has been supposed that these young men turning round in their seat were leaders of sections in the procession. It may be so, but one thing is quite clear, viz. that the sculptor absolutely required these striking figures at intervals to arrest the spectator, as if by points of light here and there. The young man on our slab is one of these brilliant points of light.



THE RECENTLY RECOVERED FRAGMENT OF THE PARTHENON FRIEZE.

You can imagine the effect. Here, in the thick of riders, all in strict profile and fully clad, is a youth all but nude throwing himself round in his seat. The action without the nude form would hardly have been enough to arrest the spectator: the two together are like a flash of light. For myself I admire intensely that left arm of his against the folds of the chlamys, so extraordinarily lovely is the treatment of the relief just there, with the folds blown out a little in the wind, forming a moving background, having a few deep shadows which intensify the brilliancy of the bare arm.

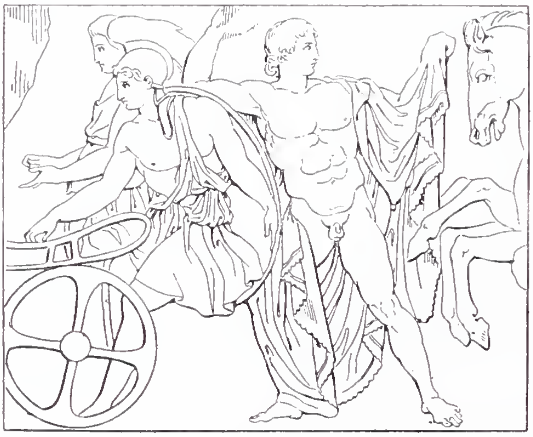
In a frieze of over 500 feet in length the sculptor had need of many devices to carry the eye of the spectator irresistibly along. In the cavalcade he found a formidable difficulty in the number of horses' legs which came crowding together in places. He saw that if he allowed the tail of every horse to fall in its natural manner there would be no repose whatever in the lower



SLAB FROM THE PARTHENON FRIEZE IN THE BRITISH MUSEUM, WITH THE RECENTLY RECOVERED FRAGMENT PHOTOGRAPHED IN POSITION AT TOP LEFT-HAND CORNER.

part of the frieze; the whole would be a monotonous repetition. Therefore he took care to get rid of the tails of his horses in one way or another, sometimes in a very rough and rude manner, at other times on the most shallow pretence, at which one is tempted to smile. Yet so successful is the effect that I have never read in any book, nor heard in any criticism of the frieze, the least notice of this very bold proceeding on the part of the sculptor. In the well-known group of the rearing horse in the west frieze the tail of the horse is given in all its beauty. There was plenty of room just there and no excuse for any omission. But even there we see that the sculptor had no great liking for the tails of horses. While the more solid upper part is given in relief, the lower, thinner part is cut into the background of the relief, to give it an unsubstantial appearance. Too much of that would not have suited his composition.

I should add that the north side of the Parthenon frieze, to which the slab we have been most concerned with belongs, had been sculptured with infinitely greater thought and care than the corresponding south side, on which the same subjects were represented almost as if in duplicate. Of course there are now and then on the south frieze groups of dazzling beauty. But in the main the fact is as I have said, and doubtless the true explanation is that the south side of the Parthenon was turned away from the ordinary route of visitors to the Acropolis. There was nothing of importance between it and the fortification wall, whereas on the north side there were endless attractions. But the Parthenon frieze is too vast a subject to enter upon in any detail on an occasion like this. I am delighted, however, to give you this first notice of the new fragment.



DISCUSSION OF THE FOREGOING PAPERS.

The President, Mr. Aston Webb, F.S.A., in the Chair.

Mr. H. HEATHCOTE STATHAM [*F.*] said he had much pleasure in proposing a vote of thanks to Mr. Penrose for his learned Paper, but he thought they would have to wait until the Paper was before them in print, with the tables that he had promised them, in order fully to follow it out. It was a difficult thing to follow out on first reading, but if Mr. Penrose had got for them a method of drawing a volute by a continuous line, instead of a succession of centres, those who might have to draw volutes would have great reason to thank him. He remembered in his student days trying the different systems—there were four, he believed—given in Normand's *Parallels*, in which one took different centres, upon a certain system, for different parts of the volute; but it appeared to him that they could never manage it in that way without a certain degree of broken-backed appearance in the curves—in fact, they could hardly believe that the executed Greek volutes, with their pure and flowing curve, could have been produced in that way. He had not been quite able to follow out all Mr. Penrose's argument, but if he was right in understanding that Mr. Penrose was recommending a system of unwinding from a central figure so as to get a continuous line, it certainly seemed that that was likely to be a much truer way of arriving at Greek volutes than by taking a succession of centres of circles. He was sure that the meeting would join most heartily in passing a vote of thanks to Mr. Penrose for giving them a Paper dealing with such an important subject.

Dr. CHARLES WALDSTEIN expressed his cordial congratulation to Dr. Murray on the very important and brilliant discovery which had been made, and to the Institute in that he should have used this occasion for making it public. They could all measure the importance of finds, not, as chemists would say, quantitatively, but qualitatively; and, though it be but a small fragment of one human figure with merely a portion of the head of a horse, relatively, considering the great importance, the supreme position which in all periods of art the works of the Parthenon held, this small fragment would be as important and as gratifying to the discoverer, to the Museum, and, he might say, to the nation, as many a discovery of vast buildings with shiploads of inferior decorative works. And, while congratulating Dr. Murray and the Museum upon this important find, he would also emphasise what Dr. Murray suggested, that no doubt throughout this country, in country houses, in gardens, as in the present instance, there must be fragments of splendid work of Greek art unknown to the possessors, which might increase and supplement the valuable possessions of the nation. Before sitting down he should like to express a further personal gratification. Going a little further afield, and generalizing about human psychology, it looked as if human beings were limited in their power of admiration and interest; as if they had a certain limited capital of their power of appreciation, and that if they drew upon it on the one side they had to make up for it by some neglect on another kindred side. They could not apparently have two things in their heads at the same time; and so he was always afraid of certain antagonisms, of certain neglect of studies of interest that might arise at one moment because another subject had for the time being claimed their just admiration. This applied to the studies which Dr. Murray and himself had at heart—namely, the study of Greek art and the study of Greek archæology. They were all gratified and touched with enthusiasm at the important discoveries recently made in prehistoric Greek archæology; but they should remember that, after all, though from one point of view in science there was hardly any difference between any subject that was properly and thoroughly studied and apprehended, still they must feel as regards antiquity that one of the chief claims on their interest of the earlier rudimentary forms of Greek Hellenic civilisation was the fact that it led up to the Parthenon; and at the present moment he felt it because, as a teacher in a university with young people in whom these psychological tendencies manifested themselves in the purest and most elementary forms, he had heard young people ask to be permitted to study prehistoric Greek archæology and early mythology, which were, after all, possible of generalisation, untrammelled by the actual testing of facts before them. He had heard one young student say that there was nothing new to be found out about Pheidias and the Parthenon. Now Dr. Murray had shown them that there was something new to be found about Pheidias and the Parthenon frieze, and that the study of it would repay the careful student for many hours, many years, not only now but far into the future.

Professor BERESFORD PITE [*F.*] thought that the Institute had very unusual reason to congratulate itself upon having such a communication from Mr. Penrose. The circumstance must be well-nigh unique to find a *savant* of Mr. Penrose's calibre, fifty years after embarking upon a subject which he demonstrated by a model at the Great Exhibition in 1851, in this year of grace 1902 returning with equal enthusiasm, should he say with increased enthusiasm, to the eternal subject—eternal so far as this world's existence might be so described—of that wonderful fountain of intellectual skill that existed on the Acropolis. And it was very interesting to them as a body that this little excursion back to the Acropolis had been not only conducted by Mr. Penrose with those interesting references to the whole series of Ionic capitals that clustered round it, but accompanied by Dr. Murray with that quaint humour which invariably seasoned his very learned communications, telling them of this exploration in the rockery of an Essex garden, and the discovery of that part that was broken off by the mischievous or careless gardener, and buried out of sight, to be re-discovered with its Greek complexion, and of the further discovery of an invaluable addition to our national treasures. He said national, quite ignorant of the future destination of this Essex fragment; but such a charming addition to our national store was indeed a circumstance that added to the very special interest of the evening, and to the enthusiasm of the meeting. With regard to the subject of Mr. Penrose's communication, no doubt when they considered it in print they would find that it was not as complex as it appeared to be. Mr. Penrose let slip a remark—designedly, of course—that what was possible to a good Greek workman was possible to a good British workman. He would add that what was possible to a good British workman ought to be possible to a good British architect; so that when they sat down to consider the subject, with the diagrams and principles before them, they would, he hoped, arrive at a conclusion which would enable them to specify and direct a workman in cutting the line of volute required. Dr. Murray had encouraged this belief by the skilled work which he succeeded in adding to the Museum from time to time. That very interesting restoration of the capital of the early temple at Ephesus was a remarkable piece of work which reflected the greatest credit upon the workmen he had trained with such patience and skill. But, after all, these wonderful capitals were made by masons, and the old theory—which used to be battled here in the days when Mr. Penrose had to champion the whole body of Greek art against the Gothic revival—that all Greek curves, because they were beautiful, must have been drawn by the freehand of some architect's pencil, had been exploded, and rightly so; and a similar theory, or rather a theory of an opposite intent—that the architect's pencil ought not to enter at all into the construction of beautiful forms, and that they had to be evolved from mere wrist-work and the mason's mallet and chisel—was also inapplicable to such a statement as he had put before them that evening. They could see in it a scientific basis, in which the simple string and the reel acted, and the action, the almost natural action of the reel and the string seemed to produce this highly charming form, this form which was perpetuated, and would be perpetuated, in spite of Ruskin's criticism, as long as they understood anything of the beauty of Greek architecture. But it was not a trivial subject. It was very singular how much interest could concentrate in a single form; and the persistence of this combination of horizontal curves, or of this combination of curves horizontally placed on the top of the column, seemed to express what one might describe as a necessary connection of ideas between the capital and the shaft. The mind seemed to revert to, and to desire, some horizontal treatment, some curved freedom, before the weight of the entablature was carried by the column itself; and it was much more satisfactory and restful to the mind that that treatment should be fixed and almost mathematical, should be determined and regular, rather than free, loose, and accidental as in the carved capital. They found an almost sensuous love of freedom combining and struggling with the definite curves of the volute in the Corinthian capital; but the Corinthian was not altogether so intellectually satisfying as this very interesting and charming problem which Mr. Penrose had demonstrated, be thought for the first time satisfactorily, that evening, and for that they owed him most hearty congratulations. They might congratulate themselves on his presence with them, and they ought to offer both to him and to Dr. Murray a very hearty vote of thanks.

Mr. THOMAS BLASHILL [*F.*] said he should like to recall an occasion, some five and forty years ago, when Mr. Penrose in that historic cock-loft, as they used to call it, in which the Architectural Museum was then located, gave them an equally carefully studied and equally interesting lecture upon the cycloid column. Mr. Penrose, even at that time, had done what one might consider as much as a life's work. Since then he had done five and forty years more. He had great satisfaction and great pleasure in supporting the vote of thanks to Mr. Penrose. As regards rockeries, some five or six years ago he brought to the Institute a beautiful piece of Egyptian carving, representing a hawk of the type so beautifully carved by the Egyptians. This was found in a back garden in Brompton by men who were then under his direction. Probably then there were still more treasures to be found, as Dr. Murray had shown them in so interesting a manner.

Mr. R. PHENÉ SPIERS [*F.*], F.S.A., said he recollected that in his student days at Paris they used to set out the curve of the Ionic volute on a large scale in accordance with one of the systems set forth in Normand's *Parallels*, and that, as they were not altogether satisfied with the proportions of it, they used afterwards to alter it gradually, generally speaking raising the upper curve in the way that Mr. Penrose had referred to in one of his diagrams. There had been one or two occasions since when he had had to draw them out full size, and he had also adopted the same system; but he should have been glad if he could have found out some more correct way, and one which gave the curves better, such as Mr. Penrose had laid before them. Mr. Penrose had on one occasion lectured before the students of the Royal Academy on the same subject, but he did not think it was taken up any further. As a matter of fact, there were not now many occasions on which one had to draw the Greek volute. With regard to the capitals at Persepolis mentioned by Mr. Penrose, he should like to ask whether those capitals had ever been actually measured by him or examined in order to see what connection they had with Greek work. He believed they were not found in any earlier work than the Palace of Xerxes, which was built after the campaign in Greece; so that Xerxes may have taken back with him some of the Greek capitals, such as those, for instance, in the Temple of Apollo Didymæus at Branchidæ, near Miletus, and the artists of Persepolis, not understanding how they were used or what their purpose was, copied them, setting them up on end to decorate portions of their columns. If that were the case, they were long posterior to the Greek work of the archaic Temple at Ephesus and of the Temple of Apollo at Naukratis in Egypt. He should like to know whether any examination had ever been made to ascertain if there was any resemblance between the curves found in the capitals of the Palace of Xerxes and those on the earlier Greek work at Miletus, or in the other Greek temples. He wished to join in the vote of thanks to Mr. Penrose and also to Dr. Murray for their extremely valuable and interesting discourses.

The PRESIDENT, in putting the vote of thanks, said he was sure all present would join with previous speakers in congratulating themselves upon having Mr. Penrose and Dr. Murray among them that evening. They were two of their oldest and most valued friends—friends, too, from whom they always learned much when they came amongst them, and they were very much obliged to them for the instructive Papers they had delivered that evening. That Mr. Penrose should be able again to give them a Paper on the Ionic volute must strike modern architects with a sense akin to despair in their own work. To think that after the lapse of over 2,000 years one small detail of the work of a Greek architect should still excite the interest and the wonder of architects must make them feel the extraordinary perfection of the art which was carried out at that time. Another thing which would strike them was that the Greeks to some extent obtained the highest artistic effect in their buildings by the application of scientific methods to their work. Many of the refinements which added so much to the artistic quality of their buildings appeared to have been worked out on scientific methods. That ought to show architects of the present day that the artistic results of their buildings would not be gained so easily as they sometimes thought, but that they must call in the assistance of the sister art of Science to refine and to ennoble their work. With regard to Dr. Murray's Paper, they must all rejoice at the discovery of this fragment of the Parthenon frieze, and their satisfaction would be complete if he was able to tell them that it was about to be added to the large portions which were already at the British Museum. There could be no doubt that that was the only place where it could finally and properly rest. As this Essex garden had turned out to have some real classical remains, they must hope that the owners of other classical rockeries would examine them carefully, and arrive at some equally fruitful results.

Mr. PENROSE, in responding, said he knew nothing about the Persepolitan capitals referred to by Mr. Spiers, except that there were capitals of that form given in Fergusson's book. As to the possibility of the volute being drawn freehand, the Greeks, if they tried freehand drawing, would have succeeded very well; but it was impossible that in so many places, with so many different artists, exactly the same form should have been arrived at by freehand drawing.

Dr. MURRAY said that, as regards the destination of the Essex fragment, he believed it would come to the Museum; but he would rather not say just yet whereabouts in Essex the fragment was. As they would see, he had carefully avoided doing that in his Paper.

9, Conduit Street, London, W., 22*nd Nov.* 1902.

CHRONICLE.

Vauxhall Bridge.

The following petition from the Council of the Institute was presented to the London County Council at their meeting on the 11th November by Sir William Collins, L.C.C. :—

We, the Council of the Royal Institute of British Architects, have heard of the fresh proposal which has been brought forward for dealing with Vauxhall Bridge.

We again desire to impress upon the London County Council the vast importance of such a structure as a great architectural memorial of our time and of twentieth-century art. A bridge across the Thames has an architectural value to the city hardly second to that of our great monumental buildings, and we respectfully desire to express our earnest hope that the erection of a stone or granite bridge may be found possible, and that the necessary powers as originally contemplated for such a scheme may be obtained.

The Council of this Institute has been favoured with an opportunity of inspecting the new design for the proposed steel bridge, with ornamental facings and parapets in cast-iron carried by granite piers. We express no opinion on the engineering questions involved, but we feel it our duty to point out that there is a total lack of any artistic quality in the ornamental portion of the design.

We remain of the opinion so often expressed by us that in dealing with great architectural monuments, which in their simplicity of form rely only upon competent artistic treatment for their monumental success, it is essential to adopt the system, common in other countries, of associating an architect with the engineer.

We have no hesitation in saying that if the scheme of the pseudo-Gothic type illustrated should become a reality, it will remain a discredit to the art of the century, to the London County Council, and to all connected with its conception.

[The petition has been referred to the Bridges Committee.]

The Church of All Hallows, Lombard Street.

At the meeting of the Council held on Monday the 17th inst. the following resolution was passed respecting the proposed demolition of the Church of All Hallows, Lombard Street :—

> That the Royal Institute of British Architects views with regret the proposed demolition of another of Sir Christopher Wren's churches—viz. All Hallows Church, Lombard Street—which has a peculiarly successful interior, and desires to express the hope that means may be found to preserve the building intact. But if circumstances prevent this, that the church should, if possible, be erected upon a suitable urban site stone by stone; and in any case that the fittings be suitably rehoused in a building of the same character where the whole of them could be brought together so as to preserve the unity of their design.

This resolution has been sent in the form of a letter to the Ecclesiastical Commissioners.

"The Argive Heraeum."

At the General Meeting last Monday, before reading his Paper Mr. Penrose, on behalf of Dr. Waldstein, presented the Institute with a copy of the recently published first volume of *The Argive Heraeum*—a most beautiful book, said Mr. Penrose, prepared by Dr. Waldstein and others on the subject of the excavations of the Heraeum, the great sanctuary of the Argives. The site has been explored with the greatest possible care by the American School at Athens under the direction of Dr. Waldstein, and the results have been recorded and illustrated with equal care, learning, and interest. The work is to be completed in two volumes. The contents of the first include a General Introduction, by Dr. Waldstein; Geology, by H. S. Washington; Architecture, by E. L. Tilton; Marble Statuary, by R. B. Richardson; and Inscriptions, by J. R. Wheeler. The President, in asking the meeting to pass a vote of thanks to Dr. Waldstein for this beautiful and interesting contribution to the Library, remarked that some estimate of the value of its contents might be formed from the fact that it represented the results of ten years' work of Dr. Waldstein.

Proposed Transfer of the Architectural Museum to the Architectural Association.

The following communication has been received from Mr. R. S. Balfour [*A.*], Hon. Secretary of the Architectural Association :—

The Council of the Royal Architectural Museum and Westminster School of Art having offered to transfer the premises in Tufton Street, together with the valuable collection of casts, to the Architectural Association, the question of premises for the Association may be said to have been at last solved.

The Council of the Royal Architectural Museum, at a meeting held at Tufton Street, Westminster (Sir William Emerson, President, in the chair), on Friday, 24th October 1902, unanimously passed the following resolution :—

Resolved, that the Council of the Royal Architectural Museum and Westminster School of Art, at a meeting called for the purpose, having received a report from their hon. secretary, Mr. Maurice B. Adams, upon the proposed transfer of the premises in Tufton Street, and the interest of the Museum Association, to the Architectural Association, and the consequent winding-up voluntarily of the Museum Association; having also received from their hon. solicitors a report that the Museum Association have the legal power to transfer their premises and interest, are of opinion that it is expedient and in the best interests of the Architectural Museum that such a transfer should be carried out upon satisfactory terms being arranged between the parties, such terms containing, *inter alia*, that after the Museum Association have appropriated all the funds at their disposal towards carrying out the agreement to be entered into, the Architectural Association shall provide such further funds as may be necessary to complete the business; but, inasmuch as the Council are not at present sufficiently acquainted with their position, financial and otherwise, to enable them to come to a conclusion, and to inform the Architectural Association what funds it would be necessary for that Association to provide to carry the transfer into effect, a Special Committee be appointed to investigate the whole business connected with the proposed transfer, with authority to consult with the hon. treasurer and solicitors and the professional auditor, and to prepare a report and financial statement, to be laid before the Council at an early date, the Special Committee so authorised to incur any necessary expenses in connection with the investigation.

The Special Committee thus appointed, consisting of Mr. Sydney W. Lee [*F.*], Mr. William Pain [*F.*], and Mr. Maurice B. Adams [*F.*], Hon. Secretary of the Museum Association, met and considered the matters referred to them, and instructed Mr. Maurice B. Adams to approach Mr. Seth-Smith, acting for the Architectural Association, with the view of ascertaining if the terms suggested as follows would be accepted by the Association :—

The Architectural Association to pay to the Council of the Royal Architectural Museum any sum which may be found necessary to relieve the said Council from all liabilities after the Council shall have expended all their available funds in carrying the transfer to the Association into effect. This liability is roughly estimated at £700, including the winding-up of the Museum Association and the assignment of the leases.

To retain the services of Mr. Francis Ford, the Curator, for at least twelve months from 25th March 1903, at his present salary; and afterwards, should they not require his services, to pay him £2 2*s*. per week for the remainder of his life.

To pay Mr. Holgate, Assistant Master since the year 1884, upon completion of the transfer of the Museum, a sum of £50.

To undertake, with the consent of the King, that the name of the Royal Architectural Museum shall in some way be retained.

To undertake to keep the Museum open to the public, as has been the case hitherto.

The transfer to take effect on 25th March next, and to include all the fixtures, fittings, and furniture then on the premises, and being the property of the Council of the Museum.

The following reply was addressed to Mr. Maurice B. Adams as the Hon. Secretary of the Royal Architectural Museum :—

56 *Great Marlborough Street, W.: 3rd November* 1902.

Dear Sir,—The report of the Sub-Committee of the Museum Council, held on 27th October 1902, together with the approximate estimate of receipts and expenditure of the Royal Architectural Museum and School of Art, from 1st January 1902 to 25th March 1903, were laid before the Committee of the Architectural Association at its meeting held on Thursday last; and we have the pleasure to forward you herewith a copy of the resolution which was unanimously passed by the Committee :—

That the Committee of the Architectural Association, having considered the communication of 27th October 1902, made by the Special Committee of the Royal Architectural Museum and Westminster School of Art, unanimously and heartily resolves to accept the conditions suggested in this communication by the Council transferring their premises to the Architectural Association, subject to confirmation by the body of members in general meeting.

We have called a special Committee meeting for Friday next, 7th November, and Mr. Seth-Smith has kindly promised to convey to us verbally the result of the extraordinary general meeting of the Royal Architectural Museum, in order that due notice of our special general meeting may be given at our ordinary meeting, to be held on the same evening at 7.30 p.m.

A report will be issued to our members immediately after Friday next.—We are, dear Sir, yours faithfully,

(Signed) Henry T. Hare, *President.*
R. S. Balfour, } *Hon. Secretaries.*
Hugh P. G. Maule, }

A special general meeting of the Architectural Association will be held at 9 Conduit Street, on Monday, 24th November 1902, at 7.30 p.m., to consider the following resolution, which has been unanimously passed by the Committee of the Architectural Association :—

Resolved, that the Committee of the Architectural Association, having considered the communication of 27th October 1902, made by the Special Committee of the Council of the Royal Architectural Museum and Westminster School of Art, unanimously and heartily resolves to accept the conditions suggested in this communication by the Council in transferring their premises to the Architectural Association, subject to confirmation by the body of members in general meeting.

The lease of the premises expires in 1926, and the lease of the land on which the new studios stand in 1976. The annual rent of the former is £80, and of the latter £60.

The Architectural Association would be required to maintain the use of the Museum to the public as hitherto; but in the administration the Architectural Association would have sole discretion.

The original cost of the building was over £4,000, the new studios cost £3,000, and the collection of casts is estimated to be worth many thousands of pounds. The Architectural Association would be required to pay the contingent liabilities at the time of transfer, roughly estimated at £700, and in some way retain the name of the Royal Architectural Museum if his Majesty the King is willing to continue his patronage.

Should the members of the Architectural Association endorse the Committee's resolution, immediate steps will be taken to complete the transfer, and to terminate the lease of 56 Great Marlborough Street at Midsummer next.

The transfer being effected, steps would be at once taken to adapt the premises, which are considered ample for the Association's present and prospective educational requirements.

The Committee has given most careful consideration to the matter, and is strongly of opinion that the opportunity of acquiring these premises should not be lost.

It may here be stated that the consent of all donors to the New Premises Fund will be asked before devoting any amount towards the equipment and alterations which will be necessary in order satisfactorily to adapt the Tufton Street premises to the needs of the Association. A considerable sum will be required, but at present it is not possible to estimate the cost. In any case the amount collected or promised will be required, as the Committee is desirous of providing the new premises with sufficient equipment, library and office accommodation, studios and class-rooms, in order to satisfy the growing needs of the Association for many years to come.

The Royal Architectural Museum and the A A. Premises.

Mr. Alex. Graham, *Hon. Secretary R.I.B.A.*, sends for publication a letter addressed to him by Mr. Maurice B. Adams [*F.*], to whose long and indefatigable service on behalf of the Architectural Museum is due in no small degree the high reputation achieved by the institution both as Museum and as School of Art. To Mr. Adams also belongs the credit of a conception which in its practical shape promises a very satisfactory solution of the A.A. premises question. The letter referred to, which was written on the eve of the negotiations being made public, is as follows :—

Edenhurst, Marlborough Crescent,
Bedford Park, W., November 1, 1902.

Dear Mr. Graham,—As Honorary Secretary of the Royal Institute of British Architects, it seems to me desirable that you should have a copy of the two enclosed papers,* as records of an impending event which cannot, I think, fail to prove of some lasting importance to our profession and, as I sincerely hope, a power for good in furthering the progress of the fine art of architecture in this country. Possibly I may be expecting too much ; but anyway, I am firmly convinced that it must be a step in the right direction. I am therefore entirely glad to have at last been able to make so decided a move, in which, of course, it would have been impossible to advance without the valued and hearty co-operation of others, on whom so much has always depended. I think it may be modestly said, however, that I was able to take the initiative after over twenty-six years' work as Honorary Secretary of the Royal Architectural Museum.

My first idea towards this change in affairs was made possible when representatives of the Institute were elected on our Council. The papers which I send you tell their own tale of the second phase of what I desire to see ; and who shall say that the ultimate success to be looked for will not be realised in the amalgamation of the A.A. with the R.I.B.A.? That the future alone can show ; for the present, however, by ensuring a permanent housing of the former a more concentrated effort will be possible towards adequate premises for the Institute. I know your personal sympathy will be accorded to what we are now endeavouring to do, and I feel also that the hearty approval of the Institute will be ensured. We have no more valued or influential friend than the President of the Institute, Mr. Aston Webb, who has helped the Museum for many a long year. It has only been by such aid as his that we are now in a position to carry out such a gift to the profession.

I send these papers now, before the project is made public, so that you may be officially aware of the matter, and that I may have the pleasure of conveying the information.

Till our members have confirmed the decision of the Council the matter, of course, is private.—Believe me, faithfully yours,

Maurice B. Adams.

Alex. Graham, Esq., F.S.A.

Reinstatement.

At a meeting of the Council held on Monday, 17th November, Mr. Laurence Youngs, of 74 Above Bar, Southampton, was reinstated as an Associate of the Royal Institute.

The Colonial Examinations.

At the Examination of Candidates desirous of qualifying for Associateship R.I.B.A., held by the Institute in Canada (at Montreal) and Australia (at Melbourne) last July, the following gentlemen passed—viz.

Canada.

HOPSON : Charles Henry ; Sydney, Cape Breton, Canada.
McLAREN : Thomas ; 11 Woodstock Avenue, Westmount, Montreal, Canada.
WOODROOFE : Arnott ; 1423 Georgia Street, Vancouver, B.C.

Australia.

BALLANTYNE : Cedric Heise ; 416 Collins Street, Melbourne, Victoria.

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* These papers are practically incorporated in the communication from Mr. Balfour, printed above.

Newly admitted Students.

Application for admission as Students having been received from the undermentioned gentlemen, who have obtained Professor F. M. Simpson's Final Leaving Certificate at University College, Liverpool,* their Testimonies of Study have been inspected by the Board of Examiners, and found satisfactory. The Council have accordingly exempted them from sitting for the Intermediate Examination, and have admitted them as *Students R.I.B.A.*

CABRÉ: José Watson [*Probationer* 1902], 38 Thackeray Street, Princes Road, Liverpool.

NEWELL: Leopold Monk [*Probationer* 1902], Brooklea, Ledsham, near Chester.

Light and Air: Mr. F. W. Quick's Investigations.

From Messrs. Banister F. Fletcher [*A.*] and H. Phillips Fletcher [*F.*]:—

We see in the Institute Journal for October that Mr. F. W. Quick has provided some interesting data with reference to the sun's direction and position, having regard to seasons, as affecting light and air. He, apparently, has altogether neglected the fact that all windows are not necessarily lighted by direct rays from the sun; in fact, in towns a large majority are not so lighted, and of course artists and others do not use such rooms.

The study of astronomy is always interesting, but we fail to see that any benefit with regard to light and air can be derived from the diagrams and the table given in the Journal.

This information, if it were of any real value in the Law Courts, could always be worked out by a competent architect or engineer with the assistance of the *Nautical Almanac.* The Courts, however, mainly consider this subject from the standpoint of the diffusion of light and from the circumstances affecting each case.

Architects' Benevolent Society.

In addition to Sir L. Alma Tadema and Mr. George Frampton, who immediately responded to the President's appeal in behalf of the above Society in his inaugural address [pp. 4, 14], the following donations have been received:—Mr. Jasper Wager, £2 2*s.*; Mr. William Owen, £10 10*s.* (and annual subscription of £1 1*s.*); Mr. T. E. Collcutt, £25; annual subscriptions—Mr. George A. Hall, £1 1*s.*; Mr. Wm. Glover, £1 1*s.* Other donations and subscriptions have been recently received from Mr. Thomas W. Aldwinckle, £21; Mr. E. Ingress Bell, £5 5*s.* (and subscription, £1 1*s.*); Mr. T. Rowland Hooper, £1 1*s.*; Mr. Robert H. Kerr, £2 2*s.*

The late M. Eugène Müntz.

Adresser à l'Institut Royal des Architectes Britanniques un court exposé des principaux travaux de M. Eugène Müntz, en même temps que montrer le grand deuil que cause à l'archéologie et à l'histoire de l'art la mort de cet érudit si bienveillant, est pour moi un honneur dont je ressens tout le prix, mais en même temps une mission dont je ne saurais m'acquitter sans une pénible émotion.

Depuis trente-quatre ans, depuis le jour où nous nous rencontrâmes, M. Müntz et moi, au Congrès archéologique international tenu à Bonn en septembre 1868, tous deux enthousiastes des trésors de l'art romano-rhénan, nous nous étions liés d'amitié; depuis quinze ans nous collaborions à la partie artistique de *la Grande Encyclopédie,* dont il était un des douze directeurs, et il y a plus de dix ans que, appréciant toute sa haute valeur, ses remarquables ouvrages, et plus encore, le dévouement avec lequel il faisait participer aux trésors de la bibliothèque et du musée de l'Ecole nationale des Beaux-Arts, dont il était le conservateur, tous ceux—et ils étaient nombreux—qui venaient le consulter, j'avais, en le recommandant aux suffrages de mes confrères de Paris et de Londres, eu le bonheur de contribuer à son élection, d'abord comme associé libre de la Société Centrale des Architectes français, puis comme membre honoraire et correspondant de l'Institut Royal des Architectes Britanniques.

Qu'il me soit permis, au sujet de ce dernier honneur qui lui fut conféré le 5 juin 1893, de rappeler les termes mêmes par lesquels il adressait à l'honoré Président de cet Institut, M. Macvicar Anderson, l'expression de sa vive gratitude:—

"La distinction si rare et si enviée que l'Institut Royal m'a accordée est faite pour m'honorer au plus haut point; j'en suis d'autant plus touché et plus fier que cette marque de sympathie est donnée à celui qui ne peut revendiquer que le titre d'archéologue par des artistes éminents, par des créateurs, qui affirment ainsi la solidarité entre l'art et la science.

"Je n'oublierai pas, d'un autre côté, qu'en m'agrégeant à une société si justement célèbre vous m'avez imposé des obligations: je m'estimerai très heureux de pouvoir prendre part aux travaux de l'Institut Royal et de justifier par mes efforts la confiance que vous m'avez fait l'honneur de me témoigner." *

Ces lignes n'étaient peut-être pas inutiles à rappeler; car les ouvrages que M. Müntz a publiés depuis cette époque justifient bien la confiance que lui témoignait alors l'Institut Royal, et, s'il n'a pu prendre une part active à ses travaux, retenu qu'il était à Paris par d'officiels devoirs

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* See regulations in the Kalendar 1902-3, p. 267.

* *The R.I.B.A. Journal*, vol. ix. New Series, No. 17, 22 juin 1893, p. 432.

pendant la durée de ses sessions, en revanche tout membre de l'Institut Royal et tout élève, boursier ou non de cet Institut, muni de la précieuse *R.I.B.A. Travelling Card*, véritable *Sésame, ouvre-toi*, a toujours trouvé auprès de lui, dans cette belle bibliothèque de l'École nationale des Beaux-Arts de Paris, dont il s'efforçait sans relâche de faire accroître les richesses, un accueil non seulement bienveillant mais cordial.

En outre les délégués de l'Institut Royal des Architectes Britanniques au troisième et au cinquième Congrès internationaux des architectes tenus à Paris en 1889 et en 1900, MM. Alfred Waterhouse, R. Ph. Spiers et William H. White en 1889, et MM. Baldwin Brown et W. J. Locke en 1900, ont pu dire alors quelle grande part M. Müntz avait pris à l'organisation des Expositions ; l'une, de portraits d'architectes ; l'autre, de dessins d'architectes, qui, pendant la durée de ces Congrès, révélèrent à nombre d'architectes étrangers et même français une faible partie, mais heureusement choisie, des collections de l'École des Beaux-Arts.

Ceci dit pour montrer quels services l'Archéologue, l'Historien d'art et le Conservateur de bibliothèque, qui s'incarnaient en M. Müntz, ont rendus aux architectes ; il conviendrait peut-être de mentionner ici que les plus illustres Compagnies françaises d'Archéologues, d'Historiens d'art et d'Archivistes, l'Académie des Inscriptions et Belles-Lettres et la Société nationale des Antiquaires de France, vont bientôt, en désignant un successeur à M. Müntz, imposer, suivant leurs traditions, à ce successeur d'enrichir leurs publications d'une Notice autorisée sur la vie et les œuvres de son prédécesseur ; c'est pourquoi j'estime qu'il y a lieu seulement pour moi aujourd'hui de vous adresser quelques notes mettant mes confrères anglais à même de connaître autant que possible ce regretté membre honoraire et correspondant de leur Institut, leur promettant d'envoyer, en son temps, à la Bibliothèque de cet Institut, les notices qui seront publiées sur M. Müntz par l'Académie des Inscriptions et Belles-Lettres et par la Société nationale des Antiquaires de France.

Né le 11 juin 1845, à Soultz-sous-Forêts (Alsace), d'une longue linée de pasteurs protestants, ayant fait ses études de droit et rempli pendant la campagne de 1870–71 son devoir de citoyen dans les Mobiles de la Seine, M. Eugène Müntz fut un des premiers membres de l'École française d'Archéologie de Rome, école où il commença nombre des travaux dont la publication devait plus tard illustrer son nom, et école à laquelle il conserva toujours une vive affection en s'attachant, dès son entrée à l'Académie des Inscriptions et Belles-Lettres à en faire valoir les travaux et à en rendre compte à l'Académie—qui a la direction de ces travaux—dans ses *Rapports annuels sur les Écoles d'Athènes et de Rome.*

Attaché à la bibliothèque de l'École nationale des Beaux-Arts, il en fut nommé conservateur à la mort de M. Vinet, en même temps que, de 1885 à 1893, il suppléait Taine comme professeur d'histoire de l'art. Il devint bientôt lauréat de l'Institut (Académie des Beaux-Arts), membre de l'Académie des Inscriptions et Belles-Lettres, membre du Conseil supérieur des Beaux-Arts et de nombreuses Commissions officielles ou de Jurys d'Expositions, et il était, au moment de sa mort, vice-président de l'Académie des Inscriptions et Belles-Lettres et désigné en cette qualité pour présider cette Académie en 1903 en même temps qu'il eût été appelé, suivant le roulement des cinq académies, à l'insigne honneur de présider l'Institut de France. Il était chevalier de la Légion d'honneur, officier de l'Instruction publique, chevalier de la Couronne d'Italie.

Quant à ses ouvrages, publiés à la traverse de sa collaboration à de nombreux recueils d'Art et d'Archéologie français ou étrangers, ils sont des plus importants. Parmi les principaux il faut citer, un peu au hasard de compléments ou d'éditions successives : *Notes sur les Mosaïques de l'Italie ; Notes sur les Arts à la Cour des Papes ; le Palais des Papes à Avignon ; Histoire de la Tapisserie : Études iconographiques et archéologiques sur le Moyen Age ; Donatello ; Raphaël ; Léonard de Vinci ; Guide de l'Ecole nationale des Beaux-Arts ; Florence et la Toscane ;* enfin, et ce sera son principal titre de gloire, l'œuvre qui, quoique inachevée, conservera dignement sa mémoire : les trois premiers volumes, copieusement illustrés, de *l'Histoire de l'Art pendant la Renaissance :* t. i, *Italie, les Primitifs ;* t. ii, *Italie, l'Âge d'or ;* t. iii, *Italie, la fin de la Renaissance*, volumes auxquelles devaient s'en ajouter deux autres, *la Renaissance en Europe* et *la Renaissance en France.*

Ces quelques notes doivent suffire à montrer dans *le Journal de l'Institut Royal des Architectes Britanniques* quel travailleur érudit, fécond et bienveillant était M. Eugène Müntz et quel grand deuil cause sa mort aux Sociétés qui le comptaient parmi leurs membres, ainsi qu'à ses nombreux collaborateurs de multiples publications, et enfin à ses amis, qui étaient *légion ;* car il était impossible de rencontrer ce travailleur opiniâtre sans lui emprunter naturellement quelque peu de sa science et lui vouer en retour une affection bien méritée.

Paris, 16 Nov. 1902. CHARLES LUCAS.

The late Charles France [*F.*].

Mr. Charles France, whose death was announced at the opening meeting, was elected Fellow of the Institute in 1893. He was born at Wakefield sixty-eight years ago, and having qualified for his profession he came to Bradford as an assistant in the office of the late Mr. Eli Milnes, by whom he was subsequently taken into partner-

ship. The firm was originally Milnes & France, but was changed to France, Milnes & France a few months ago. The work of the firm—much of it the work of Mr. France himself—is to be found in many places, but most abundantly in Bradford and the immediate neighbourhood. Some of the largest warehouses and mills in Bradford have been built from their plans, as well as several banks, the Swan Arcade, and the east wing, isolation wards, and new nurses' home at the Royal Infirmary. They have also been responsible for the new Corporation electricity works at Leeds, for similar works at Middlesbrough and Dublin, &c., and for the church at Oakenshaw.

The Practice Committee's Book on Dilapidations.

As announced in the notice-paper issued with the present number, the Practice Standing Committee will make a communication to the General Meeting to be held on the 1st December with reference to the book on Dilapidations, compiled by the Committee and now in the press. The book deals with the following subjects:—

- Repairing and surrendering covenants.
- Report on condition of premises, with notes as to practice in other countries.
- Liability of lessee under a lease for years—England, Scotland, Ireland, the Colonies, &c.
- Yearly and other tenancies.
- Farm buildings.
- Ecclesiastical dilapidations.
- Appurtenant structures; fixtures.
- Notices to repair; money payments.
- Professional charges.
- Acts of Parliament; leading cases and books of reference on the subject.

MINUTES. II.

At the Second General Meeting (Ordinary) of the Session 1902–1903, held Monday, 17th November 1902, at 8 p.m., the President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair, with 26 Fellows (including 11 members of the Council), 28 Associates (including 2 members of the Council), 2 Hon. Associates, and visitors, the Minutes of the Meeting held 3rd November 1902 [p. 20] were taken as read and signed as correct.

The following Associates attending for the first time since their election were formally admitted by the President and signed the Register—viz. Sidney Walter Bensted, Austin Barugh Botterill, Frederick John Osborne Smith.

The Secretary read a resolution passed by the Council at their Meeting that afternoon with reference to the proposed demolition of All Hallows Church, Lombard Street.

Mr. Penrose, on behalf of Dr. Waldstein, presented the Institute with a copy of the recently published first volume of *The Argive Heraeum*, whereupon a cordial vote of thanks was passed to Dr. Waldstein.

A Paper on THE DRAWING AND CONSTRUCTION OF THE IONIC VOLUTE, by F. C. Penrose, F.R.S., Litt.D., D.C.L. [*F.*], was read by the author, and explained and illustrated by lantern views.

A Paper entitled A NOTE ON A FRAGMENT OF THE PARTHENON FRIEZE, by A. S. Murray, LL.D., F.S.A. [*H.A.*] was read by the author and illustrated by lantern views.

A discussion on both Papers ensued, and a vote of thanks was passed to the authors by acclamation.

The proceedings then terminated, and the meeting separated at 9.45.

ALLIED SOCIETIES.

LEEDS AND YORKSHIRE SOCIETY.

Mr. Butler Wilson's Presidential Address.

The Opening Meeting of the Leeds and Yorkshire Architectural Society was held at the Queen's Hotel, Leeds, on 6th November 1902, when the President, Mr. Butler Wilson [*F.*], member of the R.I.B.A. Council, delivered the following Address:

FELLOW MEMBERS AND GENTLEMEN,—When I had the honour of addressing you last year, it was with a full sense of the responsibility which belongs to the occupation of this chair. The fact that you have done me the honour of re-electing me to this position has intensified my realisation of what is due to you and what is expected from your President.

The opening meeting of our session is a fitting occasion to refer to some of the considerations which, I venture to think, have affected, and will still further affect, not only our interests as architects, but also the interests of our clients.

Perhaps it is within your recollection—if not, you will permit me to remind you—that the subject that occupied our attention last year was the necessity for "enthusiasm." However much we may have imbued our minds with this great quality, we constantly find our enthusiasm "cribbed, cabined, and confined" by relentless present-day needs and conditions. To-night I shall refer to some of those ever-increasing difficulties which beset the path of the most enthusiastic.

I will first speak of the difficulties which interfere with the realisation of perfect planning. It is often our happy lot to have at disposal a situation for our building which imposes no restraints and presents no difficulties. Then, indeed, we have only ourselves to blame if the result is not all that it should be. On the other hand, we may have to deal with a site which bristles with obstacles and restrictions. In such a case let us never make the fatal mistake of endeavouring to place there a pre-conceived arrangement only suitable for some totally different situation; rather should we endeavour to turn obstacles into advantages, and let the peculiarities of our site give rise to a building which shall almost convince the beholder that no better situation could have been chosen.

Some examples of what has been achieved in this way will occur to you. I might mention the Palazzo Massimi, Rome, one of the finest examples of the culminating period of the Italian Renaissance, which is built upon a confined and extremely irregular site, and is a beautiful display of the keenest judgment and ingenuity of planning under the most adverse conditions.

The art of planning in former times was confined to a very few types of building, which did not call for much variety; and there were plans characteristic of these buildings which became models and were handed down from century to century. But we are confronted by the requirements of to-day, which embrace the conditions of modern progress. New trades, processes, and industries spring into existence, and must be suitably housed and provided for. Hotels, industrial dwellings, hospitals, workhouses, public baths and libraries, places of entertainment, and other structures, supplying a multitude of wants, can only be successfully dealt with by a careful study of their needs and workings.

Though we all may have the desire to make ourselves thoroughly acquainted with our client's needs, and do make every endeavour to that end, those endeavours are often met by ill-concealed indifference on the client's part. This indifference often expresses itself in some such words as these, "Get the building finished, and we will adapt it to our requirements."

But we must not be satisfied to rest here. We must often go to the length of extorting from the client or his employees the information of which we are in search. In short, we must get to know more about the working of our client's business, from our point of view, than he knows himself. Let us be even in advance of our client's ideas, not only thoroughly up to date, but as far in front as may be. It is our business to discover some advantage which, although our client may have had vaguely in his mind, he has not been able to formulate.

We must be determined to fulfil requirements in a far more complete way than our client has ever imagined. By these means we can enhance the reputation of our profession as a body of men who are capable of making suggestions and giving advice of the greatest value to those who are retaining our services.

An architect was recently called in to design a building to be fitted with machinery, and the client took exception to what appeared to him to be the unnecessary inquiries of the architect, as to the number and size of the machines, amount of working space, and other details. His idea was that he had employed the architect to erect a building upon a given space, and that he should be concerned only upon the erection, and the client would then place the machines *in situ* without any assistance from him. Nevertheless, the architect made diligent inquiries of the actual users of the machines, which resulted in a very slight alteration in the width of the building, thus enabling an additional row of machines to be placed within it. On perceiving this, it dawned upon the client that the architect's method of meeting the requirements was correct, and more especially when he saw that the architect had made himself thoroughly acquainted with some of the workings of the business, and would not allow him to make such a vital mistake as would otherwise have occurred.

Another difficulty which confronts us is that of adapting the acknowledged forms of architecture to the ever-increasing advantage of modern constructive inventions. The architect of the past was governed by the constructive materials which were at his disposal. Architecture possesses both body and soul—it is a unity of matter with imagination; and while we are endeavouring to infuse our schemes with the imaginative element, which should never be absent from architecture as a fine art, we are hampered at every step by the intrusion of the constructive as opposed to the reflective element.

This fight between material and imagination does not decrease with the advance of time, and there is no doubt that many accepted forms are, under certain modern conditions, far from applicable to functions which this age demands. These demands are not likely to grow less; the times are giving birth to them in bewildering profusion. To grapple with them, and at the same time preserve the essential qualities of our art, is the task which lies before us at this present moment.

It seems to me that this can best be done not by ignoring or rejecting inventions and appliances, which on the grounds of their practical utility have come to stay, but by a frank acknowledgment and acceptance of their value, and a determination to make them our servants rather than our masters. We must be ready to progress in this respect, and to seize upon all that is best in modern constructional methods, for there is no law born of past experience which may not be instantly repealed owing to the appearance of new conditions and materials. If architecture as a fine art is to live it must adapt itself to present needs, and the difficulties that face us are the requirements and problems of to-day. It will be obvious that the architect of to-morrow will be faced with difficulties unknown to us, and with this feeling it will be somewhat easier for us to face the facts which call for our efforts.

In former times, as the architect considered himself fully equipped to practise his art by a knowledge of the five orders, so the building was erected by means of the five trades. Different conditions prevail to-day. Not only is an acquaintance with the five trades necessary, but an acquaintance with others, which, fulfilling modern requirements, demand our recognition; and their name is legion. We have, amongst others: Fireproof iron and steel construction, terra-cotta and faience, electricity, heating and ventilation, concreting, asphalting, draining, artificial stone, hydraulic and mechanical appliances, elevators, wrought metal work, mosaics, glass, furniture and decoration, horticultural and landscape gardening.

Iron and steel have almost ousted carpentry from buildings of any size, and our equipment is far from complete if we do not make ourselves thoroughly acquainted with the various systems of fireproof construction. The arrival of the flanged beam and iron joist marked a great era. Steel, combining as it does the virtues of cast and wrought iron, can be utilised for supporting enormous loads. Its uses and applications are governed by formulæ, the outcome of exhaustive experimental tests. How far the employment of this material may be carried is shown us by our American brethren in the skeleton "sky-scraper." The idea that constructive metal work needs concealing from view is rapidly dying out, and a feeling is taking its place that iron construction should be frankly exhibited. Our leading architects do not now disdain the use of rolled girders in the decorative treatment of ceilings. Again, we have steel roofs, which have changed all our canons of design and caused us to abandon former methods. The advent of architectural faïence has resulted in the superficial decoration of our structures. There are new and various inventions connected with the construction of fireproof floors and partitions. We are now able to build a partition two and a half inches in thickness, which our local authorities recognise as a nine-inch brick wall, for fireproof purposes.

To enumerate all the valuable inventions which are now ready to our hand is beyond the scope of this address. Briefly I would impress upon you that architects are indeed feeling the steady invasion of the technical constructor. Technical construction is advancing; so must we, not lagging behind but marching ahead of it. If we relax our watchfulness we afford opportunity for the constructive specialist to gain an ascendency, and irrevocably forfeit our position as chief controllers.

Leaving the question of construction, there is an invasion which, if it is allowed to continue, will end in disaster: an invasion of the domains of our art by a commercial element coming forward and successfully luring numbers of our brethren to relinquish their hold upon the æsthetic side of architecture. The busy practitioner is tempted by the readiness of the trade to relieve him of the arduous work of design. The tempting words, "Designs furnished free," are constantly meeting his eye. The terra-cotta manufacturer, the cabinet maker, the mosaic worker, the glass stainer, and the ornamental plasterer offer "designs free." I counsel that on no account should we accept their offers. Any such acceptance will disgrace our profession. We can design for ourselves; if we cannot we are not worthy the name of architects. Some may say that whether the architect or tradesman designs, the client is only paying once for his art. This is a fallacy. You cannot get anything for nothing. The tradesman will see that he is paid for any work he does, including his "designs free." To suggest that the trade have become designers owing to the incapacity of the profession becomes an intolerable charge. Those who labour at design to give their best, as much for their delight in the work as for the remuneration they receive, must view these offers of "designs free" as an insidious encroachment upon the honour and rights of our profession.

And now to speak of "Architecture as an Art." Our great ambition is to clothe our buildings with some part of the qualities of proportion, dignity, poetry, and imagination; those elusive and indefinable qualities of great architecture, the attainment of which may not come, even after a lifelong searching. The architect who commands these qualities and cannot help it, will invent work of beautiful proportions; but it is as impossible for him to impart to others the means by which he does so as it would have been for Shakespeare to instruct as to how a play should be written. The laws of proportion are too subtle to be propounded, the qualities of grace too elusive to be enumerated. Although we cannot readily acquire that which shall enable us to attain our object to the full, we can do something to prevent ourselves committing gross errors. We can at least store and again store our minds by the study of acknowledged types of beauty. If we possess any receptivity, such a study cannot fail to leave permanently in our memory some residuum of appreciation for grace, some sensitiveness to all that is bad in form, proportion, and workmanship. It must help us to know when we have done something which is ungracious—help us, in short, to become our own severest critics. Let us try to produce that which is expected of us by our fellow-workers. We know well that the most gratifying reward of our labours is the appreciation of our brethren, who are so alive to the difficulties which they themselves have to grapple with. The true artist is concerned as to what his fellow-artists will think of his work. To accomplish our end we as enthusiasts must engender in our minds that sensitiveness to both good and bad, without which nothing beautiful can be created.

Having spoken of the approaching invasions of our art and the difficulties which beset the enthusiast, I will now endeavour to point out the means by which the invasions may be resisted, the difficulties overcome. Our battle-cry is Education. As Sir William Emerson said, in one of his addresses at the Royal Institute of British Architects: "There can be no doubt that the most important question of the moment is the necessity for a better and more methodical system of education for our students in architecture than exists at present." The pupil, as a rule, picks up his knowledge piecemeal, in a haphazard sort of way, with but little attention from the one who really could teach him. Then in order to pass the Institute Examinations the student crams with teachers. The cramming may have the result of passing him, but it leaves him still inadequately educated. Further, there is in all our schools too much concession to temporary or ephemeral fashions, notwithstanding many good examples of work done by our architects of this century in various defined, sober, and self-restrained styles. Men such as Barry, Scott, Cockerell, Soane, Nash, Wyatt, Pugin, and Burges knew the groundwork of their art thoroughly, and this knowledge was the cause of the purity, dignity, and good proportions of their designs. There is much talk at times of Palladio, Michelangelo, and other old masters; but I wonder how much the average architectural student really knows of any one of them? Severe and systematic courses of tuition exist abroad.

In France we have the École Nationale des Beaux Arts. In Italy there is the Academy of St. Luke; and Germany possesses a number of excellent training schools — all the foregoing establishments being under the control of their several Governments. In the universities, colleges, and technical institutions of America there are some half-dozen or more first-class training departments in architecture, which have now reached such efficiency that their students are ceasing to go to France for the purpose of study. And the best American architects are often university graduates to begin with. All these countries have felt that the interests of the community and the State demand the efficient education of the student of architecture.

Where is the architectural student who lives within the area embraced by this Society to receive his training? According to our memorandum of association, the first object for which our Society exists is "to afford facilities for the study of architecture." Let us consider in what measure we have justified our existence in this respect. As you will have seen to-night, we offer prizes for measured drawings, design, construction, essays, and sketching. All this is very good in its way, but is far from approaching that complete system of training and education with which we hope to see our future confrères equipped; and we feel that we have much to accomplish before we fulfil our mission.

In furtherance of this, I had the honour to propose, in July last, the following resolution, which was unanimously passed by your Council, viz.: "That the Leeds and Yorkshire Architectural Society take the necessary steps to found a School of Architecture, to be conducted under its auspices and patronage, to afford facilities to Associates for the study of Architecture."

Your Council also considered the following suggestions, viz.:—

The name of the School to be "The Leeds and Yorkshire School of Architecture."

The objects for which the School is established are:

(1) To afford facilities for the study of Architecture.

(2) To assist Students to fit themselves for their work as architects.

(3) To assist Students in passing the Examinations which qualify for Studentship and Associateship of the Royal Institute of British Architects.

"The Students to be under the direct control of a thoroughly qualified architect as Master, who shall be nominated by the Council of the Leeds and Yorkshire Architectural Society.

"Students wishing to join the School to be first registered as 'Students of the Leeds and Yorkshire Architectural Society.'

"After payment of the fees for the first year's course, Students to be eligible as Associate Members of the Leeds and Yorkshire Architectural Society without payment of the usual entrance fee, and as Associate Members they are to be eligible to compete for the prizes and studentships offered by the Society.

"Curriculum to be based upon that of the Architectural Association of London."

Your Council realised that this resolution could not be put into immediate effect, that it would therefore be some time before the proposed schemes could be fully carried out, and still keeping before them the accomplishment of their aims and ambition, cast about to provide our students with facilities as nearly approaching our ideal school as present circumstances will permit.

They approached the Leeds Institute with a view of ascertaining whether that institution would, with the assistance of the Society, extend the existing facilities for architectural training. The response was most encouraging. The Committee of the Institute signified their willingness to co-operate with this Society to the extent of accepting the following proposals, viz.:—

"A room to be set apart for the sole use of the students of the school.

"The master to be nominated by the Council of the Leeds and Yorkshire Architectural Society.

"A representative of the Council of the Society to have a seat on the committee of the Institution.

"Members of Council of the Society to be received as visitors to the classes.

"Prizes and studentships offered by the Society to be competed for by Associate students. The minimum amount to be expended on the above by the Society to be agreed upon."

By these arrangements we have at least achieved that which, I venture to think you will agree with me, is the nearest approximation to the spirit of the resolution: and it is most gratifying to me to be able to inform you that when the new buildings are completed, there will exist in the city of Leeds a School of Architecture which should justify its title.

THE NORTHERN ASSOCIATION.

Mr. Frank Caws's Presidential Address.

The opening Meeting of the Northern Architectural Association was held at Newcastle-on-Tyne on the 12th November 1902, when the following Address was delivered by the President, Mr. Frank Caws [*F.*]:—

Fellow Architects,—When addressing you at the opening of our Session last winter, I little thought you would call on me to address you in the same capacity again. I am truly grateful for the honour thus put on me beyond both my desert and expectation, and will prove my appreciation of your kindness by endeavouring on the present occasion once more to address you as your President, though I would have been much more pleased to have listened quietly to-night to our warmly esteemed President-elect. But I console myself with the reflection that when enjoying (as I hope we all may be permitted) his address next year at this season, you will not fail to realise that, by my involuntary interposition, it has, like good wine in the bush, gained in strength and flavour by another year's keeping. Our venerable ex-President, Mr. Glover, when paying us a very welcome but too brief flying visit a few weeks ago, complained to me that my last year's address was somewhat too general, not dealing with the local conditions of our work. Now I fear I am doomed to-night, though unwillingly, to fail again in the same particular; for in the local developments of this North-Eastern district, one of the most populous, up to date, and busiest industrial centres of the world, while there is subject-matter enough to occupy the pens of many writers much better informed than I am, it must be allowed that architectural developments are scarcely so rapid and pronounced as to afford sufficient material to form the theme of each annual discourse from this chair.

Many of us who are still middle-aged have indeed witnessed marvellous industrial revolutions and developments in this North-Eastern cradle of the steam locomotive railway system, now growing wizen in turn, and yielding unquestionably to electromotive agencies. We have seen the hundreds of shipwrights engaged in building wooden ships superseded in all our North-Eastern ports by the thousands of men employed in building iron ships; and we have seen these thousands of iron shipbuilders develop into tens of thousands of steel shipbuilders, while concurrently in the average tonnage of our naval architect's creations we have seen hundreds of tons per wooden ship grow to thousands of tons per iron ship, and to almost tens of thousands of tons per steel leviathan. Marine engines, too, in our North-Eastern district have improved in a similar almost phenomenal degree, and in view of further developments in the application both of steam and electricity to our industries on this coast we find ourselves not at the end of the tether of mechanical improvements, but still in the full rush and high career of progress.

You will, therefore, I venture to think, not question my assertion that our own profession of architecture in this North-Eastern district has, to put the case very mildly, not progressed at a rate at all commensurate with the great march of local industrial improvement.

We hear in these days not infrequently allusions to the so-called "New Architecture" by the "New Architect." But we find these are mere *expressions*. We look in vain for the realities. New trivialities, new vulgarities, new monstrosities, new strainings and overstrainings after originality offend our taste and pain our sense of fitness and propriety at every turn in our walks through our streets. But we look in vain for any substantial proof or promise of real architectural improvement. It is a sad thought, if a true one, that the old-world architects are, and must ever remain the record-breakers of our profession. To have this fact borne in continually on the mind by the evidence of the mighty and majestic works of the oldest masters is depressing and deadening in such degree to the young architect, whose brother is, say, a chemist, or an electrician, full of keen expectation of surpassing to-morrow the marvels of yesterday, that it is, perhaps, no wonder if he does occasionally "chuck" his profession from a feeling that it is scopeless and hopeless. An amateur yachtsman whose sailing excursions have always been confined to Lake Derwentwater may be content to sail no further. Another yachtsman who sails his vessel in the Solent, though perhaps he may in point of fact sail little if any further afield than the yachtsman of Derwentwater, has a feeling of infinite possibilities in voyaging, seeing that both ends of the Solent open into the great sea. A Solent yachtsman, therefore, could not be quite happy if doomed for the rest of his life to sail only on the Keswick Lake.

Similarly there are young architects, and old ones too, who have never realised the difference between the limitations of progress which seem to environ their own profession, and the great scope of certain other professions which are apparently invested by a boundless sea of accessible new attainment. These architects may live and work content that "the thing that hath been is the thing that shall be." Judging, however, by the frantically ridiculous struggles for "something new" which many of our modern architects are making, they are by no means at rest within their professional limitations, and seem crazed with craving for they know not what.

Although these observations may seem to imply profound pessimism, that is not really the mental attitude of the architect who perceives that, after all, his professional energies are, so to speak, embarked on no small lake, but on a wider inland sea, having certain unexplored outlets to the greater deep. We shall do well to ask ourselves what and where are those outlets, and how can we explore them to the best advantage? It must be apparent that as the art of music cannot escape the limitations of the gamut, neither can architecture escape certain fundamental limitations. Yet while it is possible for us to enjoy new music it will always be likewise possible for us to enjoy new architecture. It would be as improper or profane to speak of the *art* of architecture as of the art of music as *improving*. There is in these arts an *eternal* quality which renders them "the same yesterday, to day, for ever." But the rudimentary music which charmed our untutored forefathers would not equally charm the more classical tastes of the present generation. And as each generation needs its own music so does it need its own architecture. Therefore the music and the architecture of each age must adapt itself to the age.

Thus the art of every age exhibits and exposes the spirit and character of that age, so that in the architectural styles of past ages we may to-day see reflected the subtlety and refinement of the Greek, the civic greatness and grandeur of the Roman, and the boldness and romanticism of the Goth.

And it cannot be denied that, with all its restlessness, and pettiness, and vain theatricality, our most modern architecture is a more or less faithful reflex of the character of our age and generation; and certainly, if we may forecast the future from the past, one of the outlets for the development of *new* architecture (whether *improved* or not is quite another matter) is in the adaptation of new designs to the spirit and taste and fashion of the day.

I think the careful student of ancient costume will bear me out when I say that in the history of all times the fashion of people's garments and of their buildings changed simultaneously, or nearly so. In the old-world days the fashions of clothing and of architecture changed much more slowly than in our days. Indeed, I remember going in my youth to the robing-room of the House of Lords, where Mr. Herbert, R.A., showed me his then recently finished, and now justly celebrated, fresco of "Moses coming down from the Mount with the Tables of the Law;" and the artist urged me, as an art student, if I would be a scripture history painter, to go to Palestine, as he had done, and study the manners and costumes of the people, which, he assured me, remained to a large extent similar to what they were in the days of Abraham! This statement was subsequently corroborated by other artists, friends of mine, who had travelled and studied in the Holy Land; and my own study and observation of ancient and modern times certainly tend to show that the arts of the tailor and of the architect act and react on each other to a much greater degree than is generally recognised.

We know that in our own days so-called "Rational Clothing Societies" have endeavoured both by precept and example quite to revolutionise the fashions of the clothing of both sexes. No doubt such efforts have had some little influence in determining subsequent modes of attire. But no general or considerable change or improvement has thus been brought about. New fashions come and go irresistibly, gradually advancing and receding like the ocean tides; and neither the rational tailor nor the rational architect is permitted a ruling vote. Each has to conform in greater or less degree to custom and fashion, and those who are bold enough to kick against the goads must generally pay the penalty of unpopularity for so doing, however rationally excusable their kick may have been.

While deference to the fashion of his time is obligatory on the architect who does not desire to become unpopular, yet there is a great distinction between the deference which is servile and that which is conciliatory; and no architect in following fashion should fail to use his own trained taste and judgment in accentuating what he feels is good, and in minimising what he knows is bad, in the type which he is affecting. Whether we like it or not, undoubtedly the new architecture, such as it is, *is* being developed by the fashion of our day, and we must make the best we can of it.

It is very doubtful whether the Greek or Roman or Gothic architects of old time when actively developing their respective styles of architecture were fully conscious that they were developing new styles. And perhaps if we in our own day "follow the gleam," and each do our best according to our opportunities to convert a glimmer into a dawn, we may be unconscious contributors of some great new architecture which we cannot now realise, except "through a glass, darkly."

I have spoken of the Solent as having two outlets to the sea, one at each end. And so it seems to me that while the outlet from the old architecture is by following the great general tide of fashion bearing seaward at one end, there is at the other end, so to speak, of old architecture a more excellent way out, which I am glad to know many among our students and members of the Northern Architectural Association are already zealously exploring. We as twentieth century architects are confronted by new requirements in our work. We have to contrive and arrange and design to meet conditions very stringent and imperative which, in the old days, would never have been dreamed of.

Now the fact that we have thus to overcome new difficulties must, while it seems to be a bar, eventually prove an outlet for new developments. And this is the more certain to be the outcome, because if our difficulties are many of them new and unprecedented, our facilities are in many ways also new. We have at our command materials and methods and appliances which were denied to old-world architects; and though if we were to set ourselves consciously to invent a new style of architecture we should miserably fail, I think "it follows, as the night the day," that if we make ourselves thoroughly acquainted with the nature and possibilities of the new materials, and quite proficient in the application of the new methods at our disposal or within our reach, we shall necessarily, though slowly, and to a large extent unconsciously, be contributing to the formation of that truly new architecture which is destined to gladden the eyes of future generations. These new materials and appliances are as it were the instrument on which we have to "beat our music out." The music itself is not in the instrument but in the soul of the man who plays it. But unless the man master his instrument how can his soul find fit utterance?

The Northern Architectural Association is not able to supply souls to those of us who have not got any. That is perfectly obvious. But it can and does help its students and members to become masters of the instruments so to speak of their profession. And this naturally brings me to enumerate the helps which our Association thus affords.

There are our lectures, summer visits to buildings old and new, our splendid library, and the prizes annually offered to students. Though many of our younger members make use of these facilities and advantages, there are, I fear, many more who do not.

Then at the Durham College of Science, Newcastle, there are the designing classes on Tuesday nights, and the lectures on Thursday nights, conducted by Mr. Twizell, whose admirable lecture delivered in our own rooms last year is still fresh in our memory, as one which many of us would like to hear repeated.

There are also at the Newcastle College, on Mondays, classes in Building Construction conducted by Mr. Allan, and other Art Classes; and occasional free and other lectures on art and architecture at the Literary and Philosophical Institution, Newcastle.

Similar educational facilities are now happily provided in the technical colleges and art schools of Sunderland, Hartlepool, Darlington, and Durham, each of which institutions is becoming more and more a centre of light and leading.

Some time ago our Honorary Secretary, Mr. Plummer, who is never weary of thinking and working for the good of all the members of the Association, and who is continually laying us under very great obligations which we cannot ever repay, wrote to all the free libraries in Northumberland and Durham and asked them to obtain for circulation the books mentioned in the list recommended to students by the Royal Institute of British Architects; and in most cases this request was very willingly complied with.

What is necessary now is that our members, young and old, throughout the full extent of this Association's geographical area, should make use more and more of what has been thus provided for them. There are many good and wise young fellows who are already availing themselves of these opportunities, and are progressing accordingly very well; but there are many whose names are on our printed list of members whom we seldom or never see except at our annual social gathering.

There is still another direction in which the Northern Architectural Association is seeking to benefit its juniors, viz. by establishing a Students' Travelling Fund, to help pay the costs of short summer sketching tours. Two anonymous members have promised £5 each for this fund for the coming summer, and one of these gentlemen has also promised £5 for the same fund for the summer after next. What is needed is that some of our older members should take an early opportunity of intimating to the Honorary Secretary to what extent they feel disposed to contribute to this Travelling Fund.

Sometimes when old and interesting buildings are being pulled down or altered, old ironwork, gates, or woodwork, or plaster work, chimney pieces, doors, &c. are sent away as rubbish, which if preserved in an accessible place would prove excellent subjects for the young architect to draw and measure. The Newcastle College, therefore, will be glad to receive suitable gifts or loans of that sort, if architects will direct interesting specimens to be sent there where a museum of such old work may be formed. These old examples would be taken care of so that reference may be made to them not only by students sketching and measuring, but also by lecturers and others who may find them valuable as illustrating their teaching.

Every year now R.I.B.A. Examinations are held in Newcastle at least once a year, in the summer, and sometimes twice a year. Many have attended these examinations from all parts of the north-eastern district. All the educational facilities above specified can be obtained by each student for a merely nominal fee. There never have been such advantages obtainable in the north as there now are, and they only need to be made use of now in order to retain and even increase them.

The Association is stronger now than ever it was. If we all pull together and help the Association instead of any of us finding fault with it there is a bright future before us. If the one or two that are not quite satisfied would only come among us and help us to try and put right things that are not quite as we wish, instead of never coming near, and thus causing such slight defects to increase rather than disappear, it would be better for all concerned. Of architects it is true as of the followers of other pursuits and callings, *Union is strength.*

Our Association has three distinct functions to fulfil—viz.: (i) To secure uniformity of practice by its members; (ii) to induce its members to become personally known to one another; (iii) to encourage and stimulate its members to jointly endeavour to improve themselves in the proper knowledge of their profession.

Though as an Association we do our level best to fulfil all these important functions, the difficulties are not at all times easily surmountable. For instance, in carrying out the *first* function, the necessity is laid upon us of occasionally calling one another over the coals to right some real or imaginary wrong; and though your Council have not failed to act fairly and squarely on such occasions in endeavouring to judge between man and man, such judgment has not always been practicable on the imperfect evidence submitted, and has therefore had to be delayed or suspended, to the natural annoyance of one or both disputants. Fortunately disputes between fellow architects are of rare occurrence; for though it is a relief to each member of this Association to know he can appeal to the Council to protect him from injustice by a fellow member, we have most of us become more or less proficient in the art of consuming our own smoke, and are not disposed to appeal to the Council on every possible occasion. The window commanding the back door of a house, though the mistress seldom looks out of it, is a most effective check on the amiable dispositions of those servants who are given to entertain strangers as "angels unawares."

Similarly the Council of our Association as a tribunal, though seldom so used, is always more or less effective as a recognised check on wrong-doing by one architect to another.

Then, as to its *second* and most invaluable function of getting architects throughout the North-Eastern district to know one another personally; owing to their living and working so far apart in many cases, and along such distinctively individual lines, architects, but for the agency of this Society, would seldom come together. Even now, as things are, with the facilities for meeting which the Association provides, it is regrettable that many of our members still remain strangers to each other.

Your President last year put the Honorary Secretary to a good deal of trouble to issue special invitations to coffee-smoker gatherings on the students' nights; but only a few of the older members reinforced on those interesting occasions the ranks of the students, and so the attempt to promote these little reunions was not very successful; though I hope, if our Secretary does not mind the trouble of sending out the invitations, the experiment will be repeated on every students' night this winter with better results.

I am interested in observing that Mr. Aston Webb, as President of the Royal Institute of British Architects, announced in his Address his intention of having "At Homes" at 9, Conduit Street, for the same purpose of promoting mutual fellowship between architects who are now in too many cases strangers to each other in London. I am sure we will all wish him better success than we had in Newcastle last year in starting the same endeavour. Let us try it this winter a second time, in the hope that some advance may be realised on last year's responses; and though some of our members live at too great a distance to attend evening meetings conveniently in Newcastle, yet there may be sufficiently numerous gatherings from a shorter radius of the Newcastle centre to make such reunions in the winter months both pleasant and helpful.

If this Northern Architectural Association in its *first function* as a *professional tribunal*, and in its *second function* as an *architects' social centre*, has achieved some measure of success, still more it has succeeded, and is I think likely to succeed, in fulfilling its *third function* as an *educational agency*.

In this connection I am glad that the silver plate, now attached to the principal bookcase, records the indebtedness of us all to our faithful Librarian, Mr. Charlewood, who never tires of his task; and who informs us again and again of some new literary treasure which he has added to our store. But the silver plate inscription will be of small value in our Librarian's eyes unless the Library itself be more used by all our members, and especially by our students. It is a regrettable fact that two prizes offered last year for the best note-book evidence of use of the Library by students induced no competition at all. It is not too late to do better next time, the same two prizes being still available. Some student may say to me, "You have been advocating to-night the study of *new* materials and *new* methods, in order that we may develop *new* architecture. Yet now you reproach us for not being more keen users of the Library, which is of course a record of *old* works. Is there not some inconsistency in this?"

I can best reply to that objection by quoting Sir Joshua Reynolds, who used to insist, in his lectures to the students of the Royal Academy, that it was impossible for an artist to be original except by studying old works, which is, I believe, a true paradox. The study of old works, both in books and buildings, not only informs the student of facts, but creates as it were both a mental soil and a mental atmosphere, rich enough and rare enough to produce new and beautiful growths, which could not have taken root and found sustenance in the stony and thorny ground of the uncultivated mind.

Every beautiful building, whether old or new, is an educator. But though we are conscious of the beautiful when we see it, whether in a building or a statue or a living person, we cannot always understand its *secret*. Some very simple productions occasionally charm us, while some highly ornate efforts offend us; and we cannot always tell *why*. Doubtless much of the beauty of buildings is due to proportion, fenestration, accentuation, harmony of line, repose, and the disposition of light and shade. But when these and other factors of the beautiful have been taken into full account, there always remains that mystic quality which is so elusive yet so pervading, whose presence is the chief desire of the often disappointed architectural designer.

From many of our buildings nowadays this most desirable Presence is expressly barred by conditions utterly beyond the architect's control. And under such circumstances we are driven to esteem a kind of Beauty which under other circumstances we should perhaps be too ready to overlook, I mean the *beauty of the Fit*. The sense of fitness and propriety generally accompanies, if it does not help to constitute, the sense of beauty; and the more we are driven by force of circumstances to regard FITNESS as the *chief* aim of all our designs, the more pleasing and satisfactory will be their outcome.

The requirements of two buildings, however similar, are seldom exactly alike, so that in pursuing *fitness* as the chief aim of his designs, the architect will naturally, and necessarily, introduce more or less of variety as each case requires. In many instances such variations are experienced in the internal rather than external requirements, so that the architect may find, and doubtless does find, in the interior treatment of his buildings a much better field for the exercise of his imaginative and artistic powers than in the exterior elevation.

I think our profession has suffered from attaching too much importance to exterior elevational design and too little to internal design. From the very nature of the case, and especially from the play of light and shade, both by natural and artificial light, the interior of a building is usually much more interesting, much more capable of artistic and poetic treatment than the exterior; and it seems a pity that architects should leave to the professional decorator so much of the internal treatment as should more properly be regarded as the chief artistic opportunity of the architect himself.

It is true that in churches and public buildings, and also in private houses of the highest class, the architect has to a large extent kept this greatest of all his artistic opportunities in his own hands; but it would be well if in smaller and less important works he could exercise his individual genius in contributing grace, beauty, romance, and originality to many an interior which may otherwise be treated in the wholesale cut and dried regulation manner.

This of course involves that the architect of the New Age should, so to speak, "stoop to conquer," *i.e.* should lay himself out more than his forerunners have done to design furniture of all kinds to be fit adjuncts of the interiors of his buildings. By so doing the architect would not diminish but increase the importance and value of the cabinet-makers' and upholsterers' and decorators' trades, which would gain by the accession of special orders for work of more individual and original character than they are accustomed to supply under their present wholesale manufacturing system. And just as hand-painted Christmas cards command higher prices than printed ones, however beautiful the latter may sometimes be, so would even the small houses with specially designed interiors bring higher sums by way of rent or purchase than houses finished inside as well as out by the speculating builder according to his own ideas not of the *beautiful* but of the *remunerative*.

Mr. Norman Shaw and other architects have led the van in a movement of that kind; and if the students of the Northern Architectural Association continue to qualify themselves in their designing club essays and otherwise to follow that movement up, I believe they will find, even in this industrial district of working men's homes, ample opportunities for the fullest exercise of the special qualifications needed in designing artistic interiors.

While there is, as I think, scope for our rising race of architects to find employment by extending their *artistic* interest and energies to the interior architecture of small as well as great houses, on the other hand I think architects are called by the new developments and necessities of modern times to extend their *mechanical* and *constructive* interest and ability to assist our public bodies in solving some of the special problems by which they find themselves confronted.

The increasing rush of population from country to town has led to a fearful state of overcrowding, which urgently calls for action by the municipal authorities. In facing this problem the financial difficulty has proved considerable, and everything that the scientific architect can do to secure the maximum of strength, stability, and durability, as well as of comfort and security, at the minimum of cost, should be done. It is quite possible, as some of us know, to build fireproof structures in every way satisfactory at a cost but little in excess of non-fireproof construction, but the methods of fireproofing often ignorantly adopted at great additional cost make fireproofing seem to the uninformed so expensive as to put it apparently quite out of court in economically constructed flats for the labouring population. And one fears that, for want of knowing better, municipalities may follow the bad example of managers of factories and other houses of business, and, taking advantage of the *criminal negligence* of Parliament, which permits such structures, may from false notions of economy erect tall piles of flats non-fireproof, where men, women, and children may huddle together as in huge match-boxes ready for the flames—death-traps, a scandal and crime if constructed in these days of technical colleges and mechanical and constructive knowledge.

Nearly three centuries have passed since the Great Fire of London, and during those centuries there have been many other great fires in London and in our provincial cities also. But since the law preventing the rebuilding of houses in London with wooden walls, legislation has scarcely moved an inch further in the direction of guarding life and property from fire.

During these centuries of legislative inaction constructive science has advanced, so that some of us in these later days have come to realise and understand that floors and roofs can at small additional cost be rendered as fireproof as brick walls; and that buildings so constructed are not only fireproof, but also immensely stronger and more durable and more sanitary than non-fireproof structures.

This important subject, on which by virtue of our calling we as architects should be able to advise our municipal and parliamentary rulers, is one which we cannot too seriously study nor too thoroughly master, if we would not in the eyes of future and fully-informed generations figure as feeble ignoramuses blindly permitting without protest, and even in some cases participating in, the erection of such gaunt death-traps as I have referred to. Ignorance on our part of the true principles of fireproof construction is inexcusable in the architect of to-day, and will be held criminal in the "New Architect" when that unquestionably approaching individual shall step out of the dim background of cloud and fancy on to the firm and solid pavement of recognised fact as a positive personal entity.

Architects will not then be credulous enough to allow German firms of fireproof constructors to lead them to imagine that the slabs of whose remarkable strength these firms send us such striking pictures derive that strength from any nostrum which the said firms mingle with the cement and aggregate: for our new architects will be fully alive to the mechanical principles which make the strength of a concrete slab so phenomenal, and will understand that these principles are not the private property of either German or British firms, and that what requires to be used with the cement and aggregate is no make-believe secret compound, but *brains*.

There are great possibilities for the new architecture from the wise employment of Portland cement concrete, terra cotta, steel, Haskinised timber, wired glass, fibrous plaster, and other comparatively new products in combination with less novel materials.

But no matter what materials are placed at our disposal, we shall never be able to do justice either to them or to ourselves unless we make ourselves thoroughly conversant with those great physical principles which apply to all materials under the sun, and by the wise application of which principles every structural material is made subservient to the architect's dream.

These principles are strict, straight, stern and strong, and form a backbone to any structural scheme to which the architect properly applies them. They also form a sure foundation to the mind of the architect; and, being in no wise erratic or uncertain, they confirm him in his course and enable him to proceed to construct even his boldest designs without fear or misgiving.

But while, on the one hand, the architect should lean hard on these sure principles as on a strong staff, on the other hand his *imagination* must not be neglected, for Art as well as Science claims his devotion.

The footsteps of Art cannot be measured by line and rule. She is as elusive and coy as charming. She is, moreover, very easily offended, and if the architect's mind be too intent on her harder-visaged and sterner-natured sister, he may awake some fine morning to find that his more winsome companion has taken her flight, and carried away with her so much of his enthusiasm for the beautiful that artistic designing, formerly a delightful occupation to him, may become a task; and he may come to experience that he has grasped the real substance of structural law only to miss his hold on that lovely shadowy wraith whose unseen, but not unreal, presence made the pursuit of his high calling an inspiration and joy.

"No man can serve two masters," or two mistresses.

The engineer gives to Science his undivided strength, and the artist gives his whole mind to Art: both these professions thus, in fact, yielding to the necessity which demands *division* of labour. But there arises, also of necessity, the counter-demand for the *union* of labour, and it is this counter-demand which calls for the architect, who by virtue of his calling must be engineer and artist rolled into one. Yes, there is no gainsaying the fact that the architect is the man to whom has been assigned the apparently impossible task of serving two mistresses his whole life through. It may be that few succeed in preserving throughout their professional career that true balance between Science and Art, between the faithfulness to Truth and the worship of Beauty, which is characteristic of the genuine architect. To maintain this balance is a great struggle for even the strongest intellect and will. But it is the struggle to which our profession calls us, and if we succeed in it "great is the glory, for the strife is hard."

FIRE-ESCAPES IN AMERICAN COMMERCIAL BUILDINGS.

By Chas. A. Daubney [A.], *Godwin Bursar* 1902, F.S.I.

THE following notes on fire-escapes in American commercial buildings were prepared during my tour as Godwin Bursar through some of the chief cities of the Eastern States of America in the autumn of 1902.

The danger to life in the event of fire in buildings of all classes is universally recognised. It is a problem which demands the attention of the architect and builder as well as of the employer and administrative authority. The devastation of property by fire has few, if any, compensations. It is true that new buildings may arise out of the ashes of a conflagration, and that new business and new methods may develop; but the public has ever demanded to be protected from fire hazard, until to-day fire-fighting is a science with its own specialists and propaganda.

The safety of the public in theatres, assembly-rooms, and similar buildings is dealt with by regulations and laws in all important cities, and the experience and practice upon this point have been so widely disseminated that a standard of safety is being gradually recognised. These notes do not deal with this important class of buildings.

In the United States very general attention is given to the safety of employés and others in the event of fire breaking out in commercial buildings. The building codes and regulations of the principal cities deal with this question, and year by year the requirements are being made more stringent and more far-reaching. The State laws, also, in many instances include provisions which enable the State bureaus to regulate all buildings, in addition to those outside the jurisdiction of city regulations.

In the event of fire life may be endangered through various causes, some of which may be enumerated as follows:

1. *Burning.*—There are few trades, excepting such as may be included under the head of "explosive trades," in which this danger requires to be seriously considered. There are, however, circumstances which may be overlooked in this connection, but which may very distinctly bring a trade into the explosive category. The dust resulting from the handling and manufacture of certain materials is highly dangerous, whilst other substances are liable to give off vapours which when mixed with the atmosphere, even in small quantities, are equally dangerous.

2. *Suffocation.*—Smoke and poisonous gases given off during a fire are the most prolific causes of danger to life. They rapidly extend throughout a building, and may cut off a line of exit as completely as would the fire itself. Smoke is in one respect a fire-alarm. It, however, is usually charged with gases, the products of suppressed combustion. The inhalation of these may quickly produce insensibility and death.

3. *Panic.*—It may be considered impossible to prevent danger to life through unreasoning panic. A false alarm of fire has frequently resulted in a calamity. Much may be done, however, to minimise the danger by providing well-known lines of exit.

4. *Inadequate means of escape.*—This is a defect which in every building may be remedied; and experience in all countries has indicated that the remedial measures must in the first instance be indicated by the public authorities. Private enterprise in this matter has not been satisfactory. It will be noted from the extracts from the regulations of various States and cities given below that a considerable diversity of opinion exists as to what should be demanded by the public from the owner or occupier of a building in which this danger to life may exist. This to a large extent may be accounted for by the fact that the United States is a young country, with phenomenal developments of trade and enterprise. Each State, too, has sovereign rights of internal legislation.

The regulations with respect to the provision of means of escape in case of fire are included in the building codes, and to a large extent, as will be seen below, apply to the majority of commercial buildings.

The administration of the law upon this point generally devolves upon the chief officer of the building departments. In Philadelphia all matters on building questions are dealt with by him. From his decision, however, there is an appeal to the entire official corps of building inspectors, and from this a final appeal to a commission, nominated by the Director of Public Safety, of three disinterested experts, who get two guineas each for their services, payable by the appellant. In New York there is an appeal from the decision of the Superintendent of Buildings on any point where the amount involved exceeds £200. The Appeal Court consists of representatives nominated by the following bodies: the American Institute of Architects; the Board of Fire Underwriters; two members of the Mechanics and Traders' Exchange, one a mason and one a carpenter; the Society of Architectural Iron Manufacturers, and the Real Estate Owners' Association; and the Chief of the Fire Brigade. They may be summoned by the Superintendent of Buildings to meet once a week, and receive two guineas each for every attendance. The decisions of the Appeal Court are final.

In Chicago, in all cases where discretionary powers are given to the Commissioner of Buildings, there is an appeal to arbitration. Each party nominates an arbitrator, and the two may nominate a third in the event of a disagreement. The cost of the proceedings must be deposited by the appellant with the city authority, and is returned to him in the event of the decision being given in his favour.

In the United States the provision of fire-escapes is not treated as an isolated problem. It is very properly recognised that loss of life, as well as destruction of property, by fire reveals a local defect. In the cities of Rochester and Detroit, for instance, the fire-brigade marshals deal with questions affecting the safety of employés in the event of fire.

By means such as these it is possible to deal comprehensively with the problem, and to obtain advantages unobtainable by isolated bureaus. The well-known American external iron fire-escape has been evolved in this way. It not only affords a rapid *exit* in case of fire, but is in addition a ready means of *approach* to all floors for the fire brigade.

The following points have a direct bearing upon the question of the safety of persons within a building:

I.—THE PREVENTION OF FIRE.

While it is manifestly impossible so to regulate all commercial undertakings that the fire risk is entirely eliminated, it may be possible to reduce that risk to a minimum, and, by so doing, to simplify the question of the provision of means of escape. One of the most serious problems in this connection in the United States is with regard to fire protection in the tall office buildings. In these buildings the exigencies of business and traffic demand that powerful machinery and boilers be provided within the buildings. These are invariably placed in one of the basement stories. Obviously no attempt is made to provide a direct means of escape for the persons employed upon the upper stories, of which some are 300 feet above the pavement level but at the same time the risk of a catastrophe, in the event of a fire breaking out in the basement or of a boiler explosion, is one which may not be ignored by the architect and the municipal authority. Fire or explosion might wreck the lower floors of any such buildings, and not only endanger the stability of the whole superstructure, but imperil the lives of the large number of persons engaged within these buildings. Safety, therefore, has to be sought by preventive measures, such as rigorous boiler inspection, regulations, and the fire-proofing of all constructional portions of these buildings. State laws endeavour to minimise the risk resulting from the careless or incompetent use of furnaces and boilers. Michigan requires all stationary steam boilers to be provided with safety low-water devices. New York requires all factory boilers to be inspected by a competent person once in every six months. By such means employés may to a large extent be protected from the possibility of such calamitous explosions as that which occurred on 26th November 1901, when seventy-eight persons were killed and injured at the factory of the Penberthy Injector Company, Michigan.

The Tenement House Law of the State of New York also provides against this risk by requiring "that every tenement house hereafter erected exceeding six stories, or parts of stories, in height above the kerb level shall be a fireproof tenement house; nor shall any tenement house be altered so as to exceed such height without being made a fireproof tenement house."

The Chicago City Building Ordinance also requires that buildings used for the sale, storage, or manufacture of merchandise, office buildings, hotels, and certain classes of domestic buildings, shall, if over 100 feet high, be entirely of fireproof construction. This implies, *inter alia*, that all parts of such buildings that carry weights or resist strains, and also all stairs and all elevator enclosures and their contents, shall be made entirely of incombustible material, and that all metallic structural members shall be protected against the effects of fire by incombustible and non-conducting materials. Door and window mullions must also be faced with cast iron, terra-cotta, or similar fire-resisting materials.

A very elementary but exceedingly useful regulation is in force in Buffalo as follows: "All gas brackets shall be placed at least 3 feet below any ceiling or woodwork, unless the same is properly protected by a shield, in which case the distance shall not be less than 18 inches. No swinging or folding gas brackets shall be placed against any woodwork. Gas lights placed near window curtains or any other combustible material shall be protected by a proper shield."

The New York Charter also provides "that all lights used in theatres and other places of public amusement, manufactories, stores, hotels, lodging-houses, and in show windows shall be properly protected by globes or glass coverings."

In view of the fact that a large number of disastrous fires in commercial premises are caused through inflammable material coming in contact with naked gas jets, such provisions as those above mentioned may properly be classed amongst those directly preventive measures tending to the safety of life.

While public buildings such as theatres, music-halls, churches, and chapels for the accommodation of large numbers of persons are very properly dealt with as regards means of escape, a somewhat analogous class of building—viz. dry goods stores—are, as a rule, ill-regulated upon this point. The risk from fire in these establishments is patent to all. One of the largest of such establishments in the United States is eight stories high. Each floor, which is undivided by party-walls, and has an area of over 80,000 feet, is occupied by ranges of counters, and the gangways between are in parts encumbered with light drapery hangings. It is said that during the busy seasons between 10,000 and 20,000 persons may be found upon the premises at one time. In spite of the provision of external escape stairs, automatic sprinkling apparatus, &c., the outbreak of even a small fire when the premises are crowded with the public would probably result in a disastrous panic. Upon this point some of the building regulations appear to need amendment by providing for the subdivision of such extensive areas by proper party-walls.

New York will permit an ordinary building which fronts on three streets to be 105 feet wide and 210 feet deep. If it fronts on two streets it may be 12,500 feet in area. Power is given to the city authorities to grant a still further extension of this area in the case of buildings not exceeding three stories in height. There does not appear, however, to be any limitation to the extent to which an undivided fireproof building may be erected. In Philadelphia, too, enormous floor areas may be planned.

In Chicago buildings of ordinary construction are restricted to floor areas of 9,000 feet; buildings of slow burning or mill construction may extend to 12,000 feet; and buildings if erected of fireproof materials throughout need no dividing walls if under an area of 15,000 feet. Openings protected with fireproof doors in the dividing walls are permitted. Public safety from fire demands that the enormous conflagration risks existing in the neighbourhood of these buildings should be more strictly supervised. Few commercial buildings require such extensive undivided floor-space.

The subdivision of premises by party-walls affords a substantial check to a conflagration, and an excellent means of escape by the construction of openings in the walls may be provided. In the event of a fire breaking out in any one portion, persons can escape through the openings into an area unaffected by flame or smoke. The area of an undivided building is a well-recognised item in the consideration of the fire risk on that building. An estimate of the extent to which a building may be erected without unduly increasing the risk to the building and employes may be gathered from the regulations of the insurance companies. A normal building of ordinary construction is one with an area not exceeding 2,500 feet, and with a height not exceeding fifty feet; if fireproof construction be used, then the building may be extended to an area of 5,000 and to a height of 100 feet. In a building of the latter class at least 2,000 persons can be employed, assuming 250 cubic feet as the allowance for each employé, which is the general requirement in the United States, as it is under the Factory Law in this country. It may also be noted that a building of 5,000 feet area can be so planned with alternative means of escape that none of the employés shall be compelled to travel on any floor more than about 100 feet in order to reach an escape. This limit of about 100 feet is also one incorporated in some European regulations.

II.—THE LIMITATIONS OF FIRE.

As has been suggested above, regulations could not be framed so as entirely to prevent fire breaking out in a commercial building; much, however, can be done to prevent the spread of fire. By the use of cross walls extensive and dangerous conflagrations may be checked. The vertical spread of fire in a building must also be checked. This is naturally accomplished by providing unpierced floorings, or where stairs, lifts, &c. are necessary by separating them from the building. Thus flame and smoke would not pass upwards, and the burning materials would not fall from floor to floor.

At a recent disastrous fire in London the conflagration appears to have been limited for some time to one room, and kept in check by an ordinary glazed partition. It rapidly spread, however, when the glass was broken by heat and water, and the flames and smoke found ready escape up a shaft occupied by an open lift and staircase.

It is true that lifts and staircases may form one of the chief interior ornamental features of an important building. The necessity of providing adequate safety for the employés within a building may require some slight modification in the present methods of planning staircases, &c., but it is suggested that this modification need not militate against architectural effect.

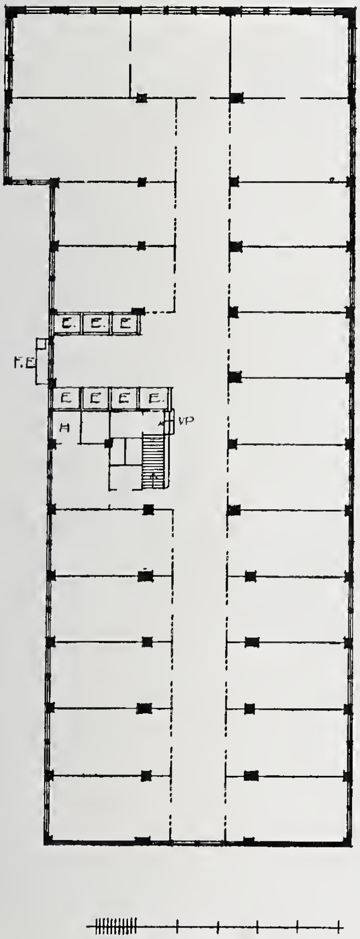


FIG. 1.—PLAN OF THE NATIONAL LIFE BUILDING, CHICAGO.

(Messrs. Jenney & Mundie, Architects, Chicago.)

E E, Passenger Lifts. F. E, Fire Escape. H, Goods Lift.

In the United States very definite opinion has been formed upon the treatment of lifts and other shafts in a building. In the Buffalo building laws is found a valuable provision for the prevention of the rapid spread of fire through burning materials falling through skylights at the bottom of lighting shafts. These skylights are required to be constructed with prismatic lights in iron frames or with thick glass protected with wire netting. Similar materials or wired glass must be used in manufacturing premises, hotels, &c. for skylights over portions of premises to which the public has access.

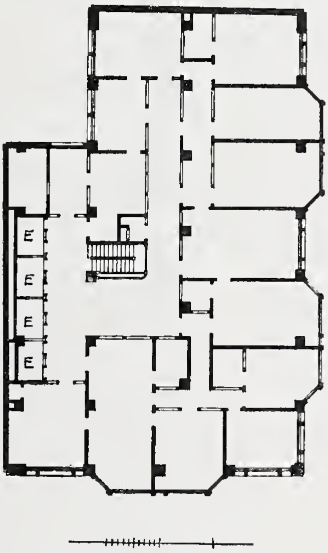


FIG. 2.—PLAN OF THE RELIANCE BUILDING, CHICAGO.

(Messrs. D. H. Burnham & Co., Architects.)

E F, Passenger Lifts.

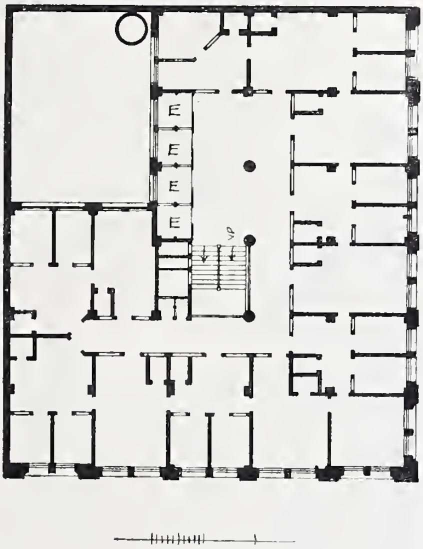


FIG. 3.—PLAN OF FORT DEARBORN BUILDING, CHICAGO.

(Messrs. Jenney & Mundie, Architects, Chicago.)

E E, Passenger Lifts.

The Chicago Building Ordinance requires that the well-hole of lifts shall be supplied with hatches to close automatically, otherwise, in all non-fireproof buildings, the shaft must be enclosed with an entirely self-supporting brick wall or tile partition extending from the foundations to six feet above the roof. In buildings of fireproof construction the enclosure must be of incombustible material of a light construction which may be supported upon the floor joists. The door openings must be fitted with iron doors so secured that, excepting on the ground floor, they may not be opened from the inside. A skylight and ventilator, one-twentieth the area of the shaft, must be provided at the top.

The New York State Tenement House Law permits lifts and dumb waiters to be constructed in the well-hole of stairs, where the stairs themselves are enclosed in brick walls and are entirely fireproof. In other cases the enclosures must be fireproof throughout, with self-closing doors at the openings. Under the New York Building Code also all dumb-waiter shafts generally must have walls of brick or other fireproof material with self-closing fireproof doors, and where the shaft does not go to the level of the floor of the lowest story the bottom of the shaft must be sealed with fireproof material.

Under this code lifts in non-fireproof buildings of the factory class must be enclosed with brick walls extending three feet at least above the roof. The openings in these enclosures must be fitted with fireproof shutters or doors, and the top must be covered with a skylight three-quarters of the area of the shaft. Passenger elevators, enclosed with open grille work, however, may be erected within staircases where the stairs and enclosures are fireproof throughout. In all new and existing hotels, if of non-fireproof construction, lifts must be enclosed in fireproof walls.

The Pittsburgh regulations require all buildings over sixty feet in height to be entirely of slow burning and fireproof construction, and in such buildings lifts to be enclosed entirely with incombustible materials. Only such openings as are necessary for doors are permitted in the enclosures. The enclosures may be of 4-inch solid wood. Under these regulations no staircase shall encircle a lift.

The Buffalo regulations are somewhat similar.

The Rochester (N.Y.) regulations are less stringent: they require lifts, if enclosed all up, to have enclosures of brick or wood sheathed on each side with metal and fireproof doors to the openings. Should they not be entirely enclosed, metal-work enclosures not less than seven feet high may be used.

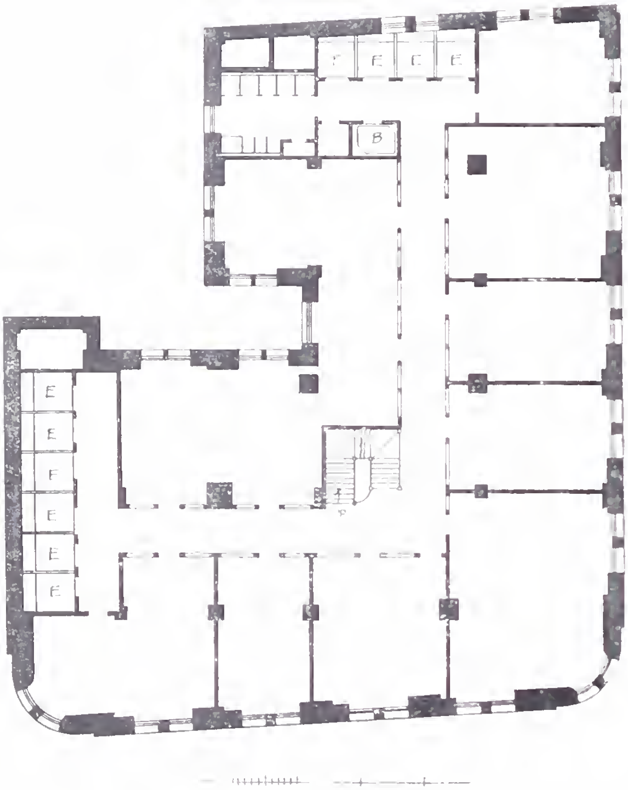


FIG. 4.—PLAN OF THE HANOVER BANK BUILDING, NEW YORK.
(Messrs. Clinton & Russell, Architects, New York.)
E E, Passenger Lifts. B, Bank Lift.

From these regulations it may be gathered that the consensus of opinion points to the desirability of complete enclosure of lifts. In this way the rapid diffusion of smoke and flame throughout a building may be prevented. Naturally passenger lifts in the well-hole of staircases are, to a large extent, unobjectionable, from the point of view of fire risk, so long as the staircases themselves are properly enclosed.

A reference to figs. 1, 2, 3, 4, 5, and 6 of the plans of some tall office buildings will show that generally the lifts in these buildings are unenclosed—open ornamental grilles are used. These buildings are of fireproof construction throughout, and few ordinary fires have been recorded in connection with such. Possibly, therefore, it is unnecessary to insist upon their lifts being enclosed. Fig. 1 is one of the upper-floor plans of the 12-story National Life Building, Chicago. Fig. 2 is a typical floor-plan of the 16-story Reliance Building, Chicago. These two plans indicate the small amount of external wall space possible under the American system of steel construction. Fig. 3 is a plan of the 13-story Fort Dearborn Building, Chicago. Fig. 4 is a plan of the Hanover Bank Building, the most recently erected "skyscraper" in New York. Fig. 5 is the plan of the 11-story Potter Building, New York. Fig. 6 is the plan of the Exchange Court Building, New York. Many persons are of opinion that in these buildings ordinary fire risk to life may be looked upon as non-existent. It is true that little besides the ordinary furniture, books, &c. within the offices is inflammable, and a fire would be easily confined to a single room, without creating much notice or alarm in the building. Apart from the question of furnace and boiler risk in these buildings, no provision appears to be made with regard to the shops usually found in the ground floor hallway. Tobacconists' and newspaper stalls are sometimes provided here, and a slight outbreak of fire in one of these stalls might easily result in the lift and staircase wells becoming instantly charged with smoke, which would spread throughout the upper halls and corridors and cause alarm and panic, resulting in serious risk to life. These shops should be prohibited, and if the lifts were kept at a distance from the stairs and both shut off from the main corridors by swing doors, if only of ordinary glazed construction, the risk of the fire spreading would be materially diminished.

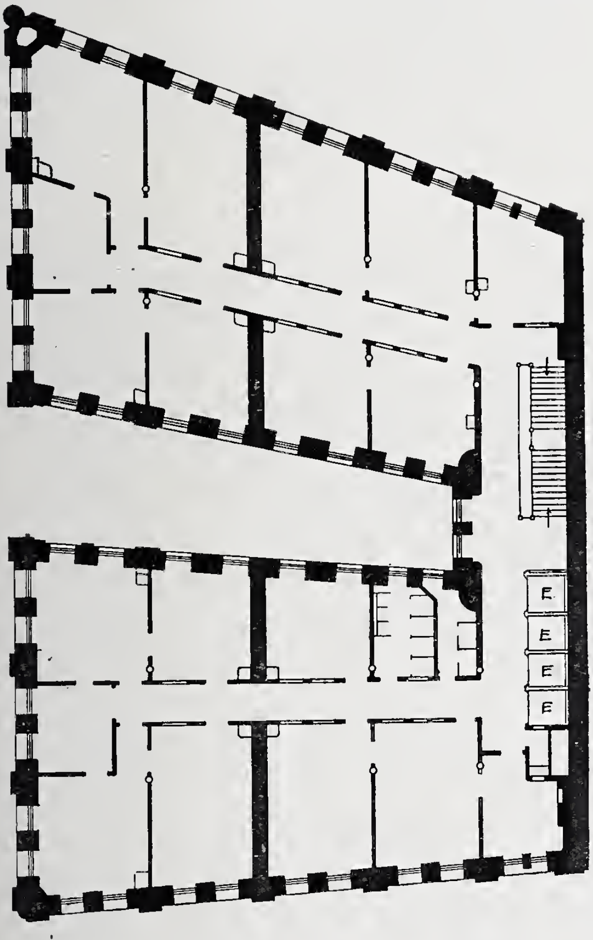


FIG. 5.—PLAN OF THE POTTER OFFICE BUILDING, NEW YORK.

E E, Passenger Lifts.

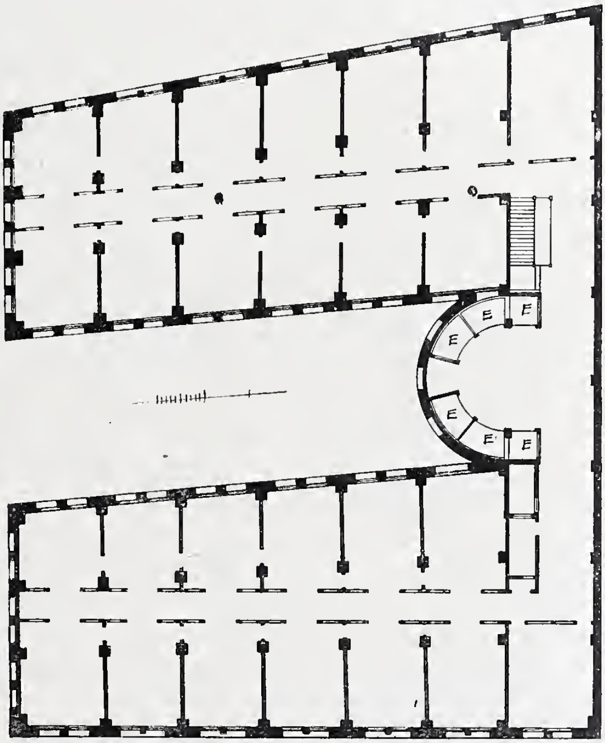


FIG. 6.—PLAN OF THE EXCHANGE COURT BUILDING, NEW YORK.

(Messrs. Clinton & Russell, Architects, New York.)

E E, Passenger Lifts.

Objection is frequently taken to the enclosing of lifts with fireproof walls. It is urged that doors, even if self-closing, must be fixed open during the passage of goods, and may easily be left open afterwards by careless and indifferent persons, in which case the benefit of the complete enclosure is lost. This difficulty can be met in several ways. Hatches closing automatically may be placed at each floor level, but, as they must be pushed open by the lift cage during its travel up and down, the speed of the lift is curtailed. Automatically lifting doors may be provided. The objection to this arrangement, however, is that the doors rise and fall as the cage passes all intermediate floors. The best form of lift door is one which can only be opened from the inside and which locks the lifting apparatus, when open, by a simple device of cord and pulley. The doors cannot remain open excepting when the cage itself is opposite, in which case the lift well is plugged at that point, and fire and smoke cannot ascend.

III.—THE SUPPRESSION OF FIRE.

The ability to suppress a fire in its initial stages is an important element in considering means of escape from fire. Private hose hydrants coupled with a private fire brigade may do much in this direction. It is, however, not unknown for such provisions to fail under the stress of an actual outbreak. Plentiful supplies of sand, buckets of water, and hand grenades have been advocated as a ready method of fire extinction in the initial stages.

A system of sprinklers throughout a building is perhaps more effectual. It lessens danger to life, inasmuch as a volume of water will usually descend immediately upon an outbreak and suppress flame and smoke. It may also be claimed that the sight of a stream of water descending will tend to prevent unreasonable panic amongst employés.

A point of considerable importance in this connection is that many employés may be rendered incapable of flight in the event of even a slight outbreak. They will, therefore, remain in an atmosphere rapidly becoming charged with noxious vapours unless the fire is dealt with immediately upon the outbreak. Some of the large commercial buildings have been completely equipped with these sprinklers at a cost not exceeding £7 per 1,000 feet of floor space protected. This is a trifling expenditure upon the part of the owner or occupier, when, according to insurance calculations, the fire risk to property, and incidentally to life, will be reduced by at least 40 per cent.

In the United States much is expected of its fire brigade, and it is assumed that in different problems of escape, such as those in connection with tall office buildings, the fire brigade will be speedily upon the scene of an outbreak to assist the occupants. It is assumed that in the event of fire in these and similar lofty buildings, the occupants will enter their rooms and close the doors until the fire has been subdued. To this end the New York Building Code demands that in all new buildings exceeding 150 feet in height a steam pump and a lift shall be kept in readiness for the use of the members of the fire department during all hours of the day and night and on holidays and Sundays.

As already pointed out, the question of escape in case of fire is not dealt with alone but in conjunction with other questions affecting the problem. For instance, opportunity is taken by the authorities when providing external iron fire-escapes to attach standpipes. In this way the Fire Brigade are able in the majority of cases, and without the assistance of the ordinary street fire-escape, to reach immediately any of the upper floors of a building, to attack the fire, and to render assistance to persons who have been unable to escape.

The Chicago Building Ordinance requires that generally all manufacturing premises, office and domestic buildings, churches, &c., four or more stories in height, shall be provided with external balconies, ladders, and standpipes at each floor level. The standpipe must be three inches in diameter, with two hose connections at the lower end and at each floor level. Buffalo also empowers the Board of Fire Commissioners to call for standpipes to be affixed upon buildings in addition to the fire-escapes referred to below.

It will appear, therefore, that to some extent such buildings are not self-contained as regards means of escape, but are dependent upon external assistance. Although, as in March 1888, when all street traffic in New York was blocked owing to a heavy blizzard, there may be a few occasions when the Fire Department are unable to render the anticipated assistance, this disadvantage is counterbalanced by the direct influence which the fire department possesses in fire questions affecting all buildings.

IV.—DIRECT MEANS OF ESCAPE.

Many city ordinances as above referred to specifically empower the authorities to demand, where necessary, the provision of adequate means of escape from the majority of buildings. This applies to old and new buildings alike. With regard to old buildings, however, it appears that constitutionally it is difficult, if not impossible, for the authorities to sustain a demand which would entail internal structural alterations.

The Chicago Building Ordinance emphasises this point by stating that excepting in cases where the immediate safety of the occupants of buildings is concerned, nothing in the ordinance shall be considered as requiring alteration or equipment of buildings existing at the time of the passage of the ordinance, and at that time complying with the ordinance then in force.

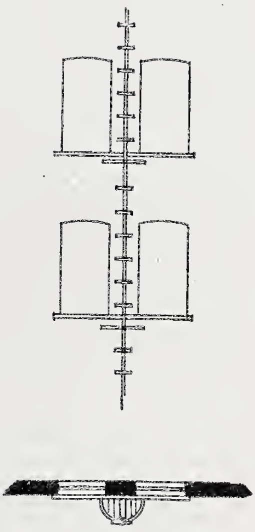


FIG. 7.

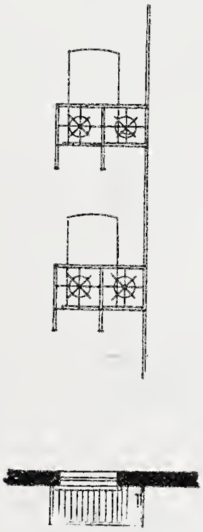


FIG. 8.

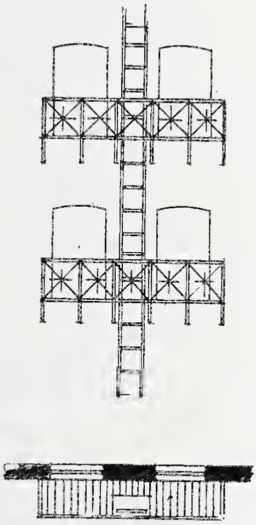


FIG. 9.

Retrospective legislation is weak. On the other hand, no difficulty is experienced in a demand for an *addition* to an existing building. It is possible, therefore, to add to any building external fire-escapes, ladders, balconies, &c.

Although there are regulations in force in some parts which call for movable fire-escapes, such as ropes to each bedroom window in hotels, they are widely regarded as escapes of suspicious value. Many ingenious appliances have been introduced to meet the need of a ready means of escape; but canvas chutes, wire ladders, and other movable forms have been found wanting under actual fire tests. Ropes are difficult to descend by any except athletes, and they are an impossible form of escape for females; canvas chutes require skill and care in their manipulation, and demand from those about to descend nerve and courage. All these proposed forms of fire-escape may be found out of order upon the emergency for which they were provided. Further, the occupants or employés may be unable to work them or may be ignorant of their use. In addition the disturbance caused by an alarm of fire may be such as to upset all preconceived arrangements for the operation of these escapes. An illustration of this occurred recently in one of the American cities where a weaver, fearing that he might be unable to escape rapidly down his staircase in case of fire, fastened a rope to the loom at which he was constantly working, and coiled it on the cill of the window by his side. An alarm of fire did occur, when he immediately opened his window and, neglecting the means of escape prepared by himself for his own use, and with which he was entirely familiar, leaped through the window over the coiled rope, and was killed upon the pavement beneath.

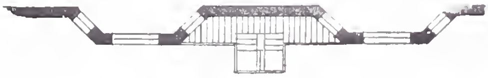


FIG. 10.

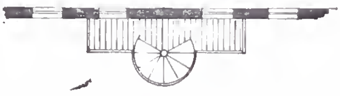


FIG. 11.

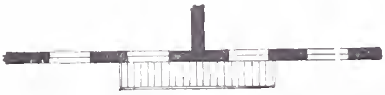


FIG. 12.

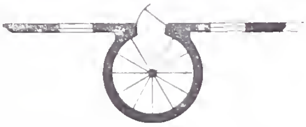


FIG. 20.

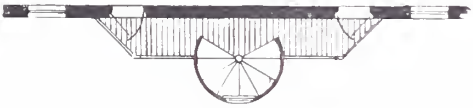


FIG. 21.

At a critical moment should many persons be depending upon such or similar unsubstantial appliances, the risk of failure is increased. The well-known form of American fire-escape which is so obtrusively in evidence, has been evolved from many experiments, and it must be judged as an appliance which, while open to several objections, meets the requirement for a comparatively inexpensive article, and can be applied to the majority of buildings. Some of the forms taken by these escapes are indicated in figs. 7, 8, 9, 10, and 11. Fig. 7 is an old form, and consists of an upright iron post with cross-pieces at intervals for foothold, carried up the front of a building; access is obtained to it from adjoining windows by means of small pierced iron landings. Only athletic and cool-headed men could be expected to descend such a contrivance, and then only under the most favourable circumstances. Fig. 8 illustrates an improved form of escape which provides a small iron balcony at window-sill level with a balustrade and vertical iron ladder at one end, down which persons can escape by small manholes in the flooring of the balconies at each level.

Fig. 9 is a modification of the last form, with the ladder in the centre of the balcony facing the street. Objection may be taken to these appliances on the ground that there is no protection afforded to persons descending in the event of fire bursting out from openings below them. The vertical form of ladder is also an objectionable feature. Efforts have been made to obviate the difficulties by such contrivances as those illustrated in figs. 10 and 11. These can be placed opposite a wide pier or blank wall, and afford to some slight extent an easy form of descent. As will be readily seen, these latter forms naturally require a great protection over the public way. Direct supports from below are unobtainable, and the staircases, therefore, must be hung up to the face of the building.

Fig. 12 is a simple but excellent form of escape. A balcony gives access to and from the windows of adjacent buildings. In the event of fire persons may rapidly and safely escape on the level into an area unaffected by flame or smoke, and by whatever means this object is attained it is satisfactory. As may be seen, this form of escape is only possible where the two buildings are in one ownership, or where adjoining owners are willing to co-operate. Fig. 13 is the plan of a pair of New York tenement houses which readily lend themselves to this method of escape. The modern form of escape in general use may be gathered from fig. 14. This is the form required by the New York State Department of Labour and illustrated upon its notice for fire-escapes.

In this case balconies not less than 6 feet long and 3 feet wide, and embracing two windows, are provided at each sill level, and slanting stairways give easy communication from floor to floor. At about the first-floor level a counterbalanced drop-ladder is provided. The illustration shows the ladder suspended vertically. Under some city ordinances it is hinged and suspended, so that when lowered it forms a sloping stairway similar to those above. The specification given below for these balconies will indicate the extremely light form of construction adopted. Accidents, however, from this cause are practically unknown.

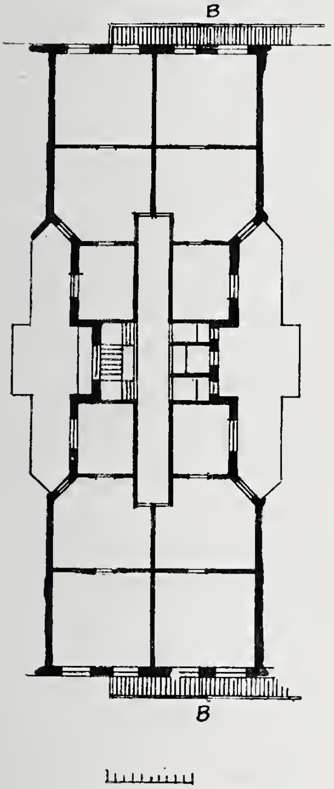


FIG. 13.—PLAN OF A NEW YORK TENEMENT HOUSE.

B B, Escape Balconies.

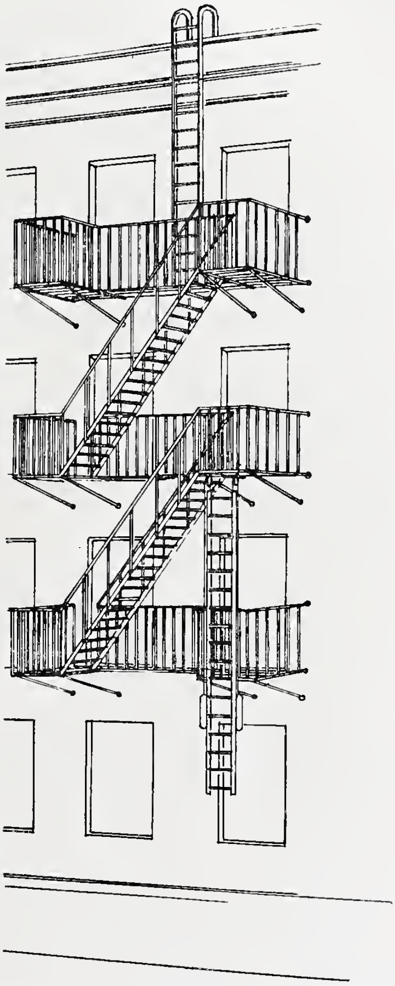


FIG. 14. — ILLUSTRATION OF THE FIRE-ESCAPE REQUIRED UNDER THE NEW YORK LABOUR LAW.

"The brackets must not be less than ½ inch by 1¾ inch wrought iron, placed edgewise, or 1¾ inch angle iron, ¼ inch thick, well braced, and not more than 3 feet apart (unless to obtain headroom at balcony openings); and braces to brackets must not be less than 1 inch square, wrought iron, and must extend two-thirds of the width of the respective brackets or balconies. In all cases the brackets and braces must go through the wall, and be provided with screw-nuts and washers not less than 5 inches square and ½-inch-thick; washers must be provided on the outside of the wall on brackets ½ inch thick and 3 inches square. The part going through the wall shall not be less than 1 inch in diameter.

"Top rails of balconies must be 1¾ inch by ½ inch wrought iron, or 1½ inch angle iron, ¼ inch thick, and in all cases must go through the walls and be secured by nuts and 4-inch-square washer on inside of wall, at least ⅜ inch thick; and no top rail shall be connected at angles by the use of cast iron.

"Bottom rails must be 1¼ inch by ⅜ inch wrought iron, or 1½ inch by 1½ inch angle iron, ¼ inch thick. Where, in order to obtain headroom in balcony openings, the central brackets are placed more than 3 feet apart, 2-inch by 2-inch angle-irons, ¼ inch thick, must be used for bottom rails. In frame buildings the top rail must go through the studdings and be secured by washers and nuts, as in the case of brackets.

"*Connections or filling-in Bars.*—Top and bottom rails may be connected by ¾-inch by

$\frac{1}{4}$-inch iron, not more than 3 feet apart, with $\frac{1}{4}$-inch by 1-inch iron cross-bars, all well riveted at top and bottom and also at crosses. If filling-in bars are used, they must not be less than $\frac{1}{2}$ inch round or square, wrought iron, placed not more than 6 inches from centres, and well riveted to the top and bottom rails.

"Stairs in all cases must properly incline, and be not less than 18 inches wide, and constructed of $\frac{1}{4}$-inch by 4-inch wrought-iron sides and strings. Steps must be of not less than 6 inches treads, not more than 9 inches apart, and $\frac{1}{4}$-inch by 1-inch wrought iron, and 1 inch apart, and well riveted or bolted to the strings. No cast-iron steps shall be used. The stairs must be secured to a bracket on top, and rest on and be secured to a bracket or cross-bar at the bottom. All stairs must have a $\frac{3}{4}$-inch handrail of wrought iron on both sides, well braced and securely fastened.

"Floors of balconies must be of wrought iron, 1 inch by $\frac{1}{4}$ inch slats; placed edgewise, not over $1\frac{1}{4}$ inch apart, with three rows of thimbles strung on wrought-iron rods running through and well fastened at the ends. Flooring must be fastened to bottom rail with $\frac{3}{8}$-inch round wrought-iron clips not more than 4 feet apart. The openings for stairways in all balconies shall be not less than 20 inches wide and 3 feet long, and have no covers. The sides of each such opening shall be guarded by a rail.

"Drop-ladders from lower balconies, where required, shall not be less than 12 inches wide, and shall be made of $1\frac{1}{2}$-inch by $\frac{3}{8}$-inch sides and $\frac{5}{8}$-inch rungs of wrought iron. The drop-ladder shall be a balance-weight ladder, hung to bottom of a second balcony by a chain running over loose pulleys securely fastened. The ladder must be securely held in place at lower balcony by clips so arranged as to allow free movement of the ladder up and down. Pulleys and clips should be made to work free, so that rust will not interfere with the use of the ladder. A 24-inch ladder shall extend from the upper balcony to 30 inches above the roof. In no case shall the ends of balconies extend more than 9 inches over the brackets.

"The height of railing around balconies shall be not less than 3 feet."

These escapes must be connected with the interior by easily accessible and unobstructed openings.

The Michigan Bureau of Labour demands that the windows and doors leading to all fire-escapes shall open outwards or upwards when provided with a counterbalanced weight, such windows to be not less than 36 inches in height and width. Chicago requires that the floors of these balconies shall be constructed either of heavy cast iron, ice-proof, or steel, and capable of carrying not less than 500 lb. The Philadelphia requirements call for a strength of 80 lb. per foot super. upon the balconies, and 200 lb. per tread upon the ladders.

Under the New York Building Code, the Department of Buildings has full and exclusive power to require the erection of these fire-escapes. The buildings affected by this regulation comprise dwelling-houses occupied by three or more families, three-story hotels and lodging-houses, boarding-houses with more than fifteen bedrooms, factories, mills, manufactories, hospitals, asylums, and all three-story workshops and stores, school and five-story office buildings.

The New York State Tenement House Law calls for fire-escapes directly accessible from each apartment, but in old non-fireproof tenement houses the party-wall balcony escape referred to above is accepted as a substitute, provided it leads to another building, and the two buildings are completely separated by an unpierced wall.

The Rochester (N.Y.) Penal Ordinance relating to buildings can require fire-escapes on all manufactories, factories, and three-story hotels, &c.

The Buffalo and Philadelphia Regulations cover a somewhat similar class of buildings, while the Chicago Ordinance insists that with few exceptions all buildings shall have at least one of these iron escapes.

Fig. 15 is the plan of a tenement factory, on which fire-escapes were ordered. The building consists of a central hallway extending from front to rear and containing an open structure, a passenger lift in the front portion, and a goods lift at the rear. Immediately upon the outbreak of a fire the central hall would probably be filled with smoke, and thus rendered impassable. The authorities have therefore demanded a fire-escape at the rear, and communicating balconies at the front, affording means of access from one side of the building to the other.

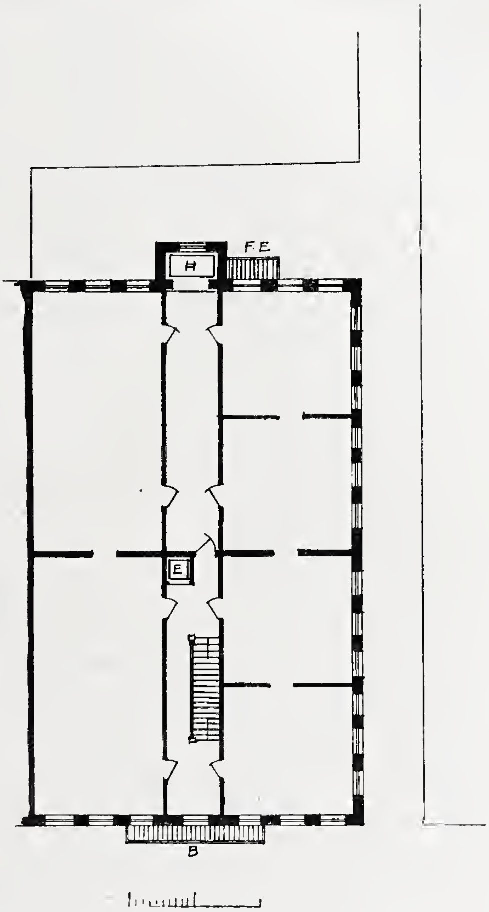


FIG. 15.—PLAN OF A BUFFALO TENEMENT FACTORY.

E, Passenger Lift. H, Goods Lift. F. E, Fire-escape. B, Escape Balcony.

Instances may be quoted where upon an outbreak of fire this form of escape has proved wanting, owing to the occupants crowding upon one which was involved in flame and smoke. On the other hand it appears that the greater proportion of persons whose lives are imperilled readily escape unassisted by means of these external iron stairways, while a large number in addition, who through injury, fear, or other causes are unable to escape, are rescued by the Fire Department down these escapes.

In many of the principal cities in the United States a permit must be obtained from the Building Department prior to the commencement of building operations. As a rule complete plans and details must be supplied before the permit is obtained, and a full opportunity is therefore afforded to secure what is required by law on all questions, including those relating to means of escape. As a rule the building codes specifically state what shall be provided in new buildings. The question of escape to a large extent resolves itself into the adequate provision and protection of the ordinary stairways, with the addition of some alternative means of escape. Some of the conditions governing a good escape staircase are as follows:—

(1) It should be situated in a convenient position.

(2) Easy escape up to and by it should be maintained.

(3) It should be sufficient to accommodate the maximum number of persons who may be called upon to use it at one time.

(4) It should be separated from the building and protected from all dangerous elements.

(5) It should deliver at ground level into the street.

(6) It should be in ordinary use by the employés or occupants of the building.

The New York Building Code provides that all new buildings, such as stores, factories, hotels, or lodging-houses, with an area of between 2,500 feet and 5,000 feet shall have at least two continuous lines of stairs remote from each other, and an additional line of stairs for each 5,000 feet of area in excess of the first 5,000 feet.

Figs. 16 and 17 illustrate the plan of an hotel recently erected in New York. Two lines of stairs have been provided, one at each end of the main corridor. Fire escapes are also provided. It may be noted, however, that the staircases deliver into a shop or restaurant on the ground floor, and are unenclosed. A fire upon the ground floor would probably render the whole of the corridors on the upper floors impassable. In the disastrous fire at the Hotel Windsor in New York on 17th March 1899 many of the visitors lost their lives owing to their inability to reach the staircases.

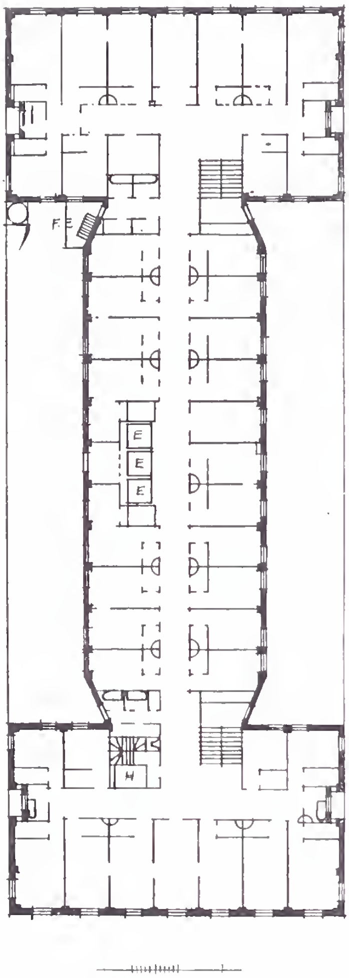


FIG. 16.—UPPER FLOOR PLAN OF THE MARTHA HOTEL, NEW YORK.

(Mr. R. W. Gibson, Architect, New York.)

E E, Passenger Lifts. F. E, Fire-escape. H, Goods Lift.

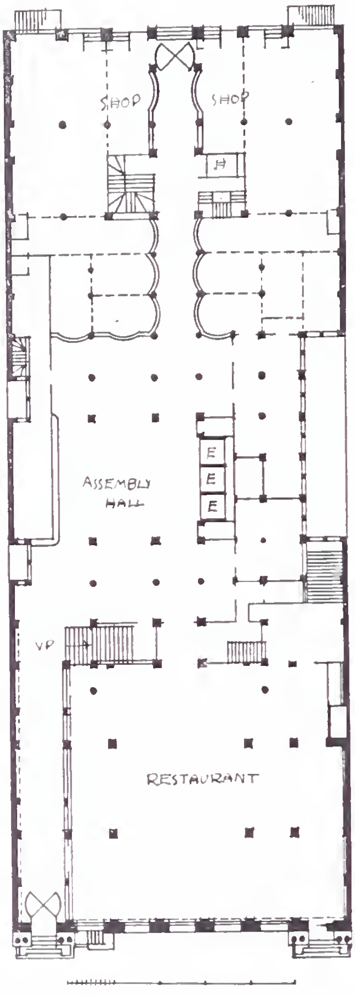


FIG. 17.—GROUND FLOOR PLAN OF THE MARTHA HOTEL, NEW YORK.

(Mr. R. W. Gibson, Architect, New York.)

E E, Passenger Lifts. H, Goods Lift.

In buildings above 15,000 feet in area the number of stairs must be proportionately increased, or as the Commissioner of Buildings shall decide. He has adopted the following regulations for stairs and exits in such buildings. They must have at least four continuous lines of stairs, none less than 3 feet wide; one flight at least shall be provided for each 10,000 square feet, and they shall be so placed that it shall not be necessary to travel more than 100 feet to reach any one flight. The number of persons to be accommodated in the building shall be calculated at one for each 10 square feet of floor area in stores; at one for each 20 square feet of floor area in factories; and at one for each 50 square feet of floor area, or two for each room, in hotels and lodging-houses; and the minimum total width of stairs at any one story must be equal to one foot for each 100 persons to be accommodated upon the largest floor. This width must be increased beyond this minimum by 6 inches in stores, and 3 inches in factories for each 10,000 square feet of floor area of each story above that floor. Ground-floor exits must be at least 4 feet wide, and the total widths of all exits must be equal to the widths of the staircases from the first floor. It is not compulsory for these stairs to be enclosed, but if they should have fireproof enclosures external fire-escapes may not be required. Doors leading to enclosed stairs must be at least as wide as the stairs, and never less than 4 feet. If passenger lifts are enclosed in solid shafts, they are looked upon as of some value as means of escape, and a reduction in the number of persons to be accommodated in the building will be allowed at the rate of one person for each three-quarter square foot of car floor surface.

It will be noted that unfortunately the office buildings do not come within the scope of this clause, and the modern tall buildings of this class in New York can therefore be erected with unprotected staircases, &c. But as power is given to the Department of Buildings to require fire-escapes upon the outside of all buildings, building owners are careful to provide satisfactory internal stair accommodation.

Reference has already been made to the unprotected nature of the staircases, halls, &c. in these buildings.

Under the New York Tenement House Law new non-fireproof tenement houses must have fireproof outside stairways, otherwise fire-escapes will be called for. Fig. 18 gives a plan of a New York tenement house as may be now erected. One flight of stairs at least shall extend from the ground-floor level to the roof, and be not less than 3 feet wide for the first twenty-six suites, and an additional flight of stairs for every additional twenty-six suites. Fire-proof buildings of this class require a stairway for each thirty-six suites; but an enclosed power lift, not less than 36 feet from the main staircase, is considered equivalent to an additional staircase. In all such buildings over three stories high the stair hall, including the staircases, must be fireproof throughout. In non-fireproof buildings they must be enclosed with brick walls, self-closing doors, and wired glass must be provided to all openings in the enclosures. Rochester and Buffalo require workshops and sale-rooms to have two staircases 3 feet wide for 100 persons, and 5 feet wide for 300 persons, and three staircases 5 feet wide for 800 persons. One less flight of stairs in each case is allowed if the building is fireproof.

Chicago has somewhat similar regulations, but demands at least two staircases if the floor area is over 7,000 feet, and that no staircase shall be constructed around or alongside open lift shafts in buildings over four stories high.

Office buildings of ordinary construction of less than 2,000 feet area require one staircase 5 feet wide, or two staircases 3 feet wide, in buildings of ordinary construction, with another staircase for each additional 2,000 feet.

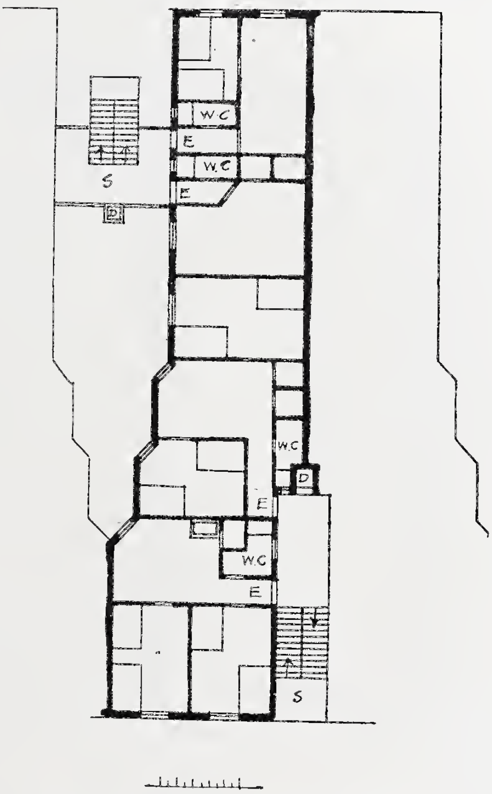


FIG. 18.—PROPOSED PLAN FOR NEW YORK TENEMENTS
(Mr. R. W. Gibson, Architect, New York.)
S S, Open Staircases. D D, Dumb Waiters. E E, Entrances to tenements.

Although, as may be noted from the above summaries, provision is made in many instances for the number and width of staircases, enclosures are not provided for in every case. An open staircase admittedly forms but an imperfect line of escape in case of fire. In many instances owners, at the instance of the insurance offices, have built in advance of building requirements. Fig. 19 is the plan of a Detroit factory which has been provided with the statutory external fire-escapes. By sacrificing a small amount of floor and wall space, the staircase next the side street has been well protected from a possible outbreak of flame and smoke on either side, and could be easily reached from any floor level by means of the doorways at each end of the balconies in connection with the staircase. A somewhat similar fire-escape is also provided adjoining the main staircase. The lifts have brick enclosures and solid hardwood doors. Floors are fire-resisting, and the main staircase is of iron enclosed in brick walls. The doorways, however, to this staircase are hung with sliding tin-covered doors, which will close automatically when a small twine fastening is burnt through.

The addition of self-closing doors to these doorways would protect the staircase from smoke, and it appears that the external fire-escape at the rear would then be unnecessary.

The building ordinance in Pittsburgh is a Pennsylvania State law, and demands that exit staircases shall be enclosed. No provision, however, is made for the protection of the doorway openings. As above mentioned, this is an essential provision if a staircase is to be depended upon as a means of escape by persons upon an upper floor. The ordinance requires that two-story schools, churches, public buildings, hotels, factories, &c., shall have at least one brick-enclosed staircase, with no interior openings other than those which afford exit from the different parts of the buildings—three-story stores more than 4,000 feet floor area on any floor above the first floor may have an enclosed "tower" fire-escape on one of its fronts. Such an escape will be an equivalent to an external iron fire-escape of the class illustrated in Fig. 14 [p. 63]. Two external fire-escapes can be demanded if a building can accommodate 100 to 500 persons, and more than two if the internal stairways are liable to be blocked with smoke, and persons may not speedily and safely escape.

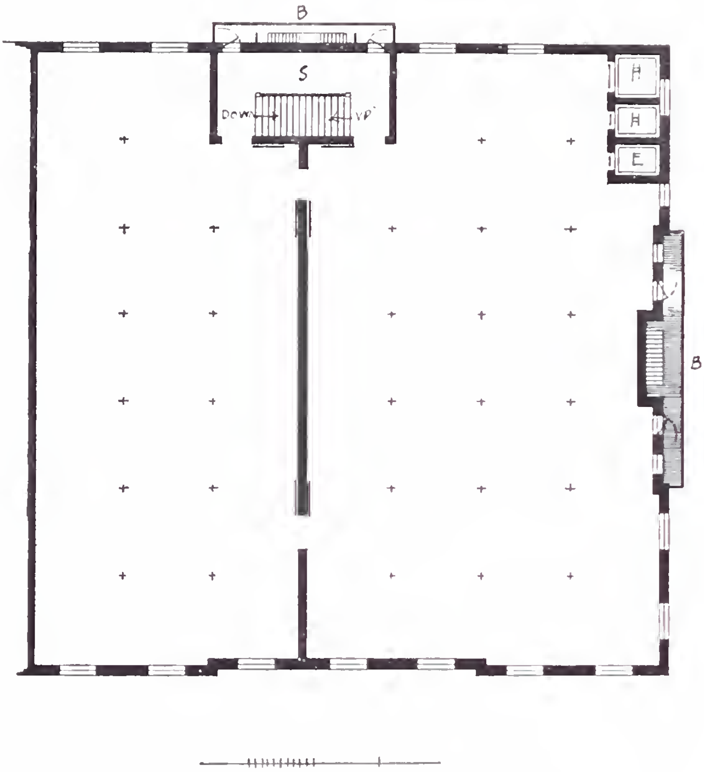


FIG. 19.—PLAN OF A DETROIT FACTORY.

S, Iron Staircase. B, External Fire-escape and Balconies. H, Goods Lifts. E, Passenger Lift.

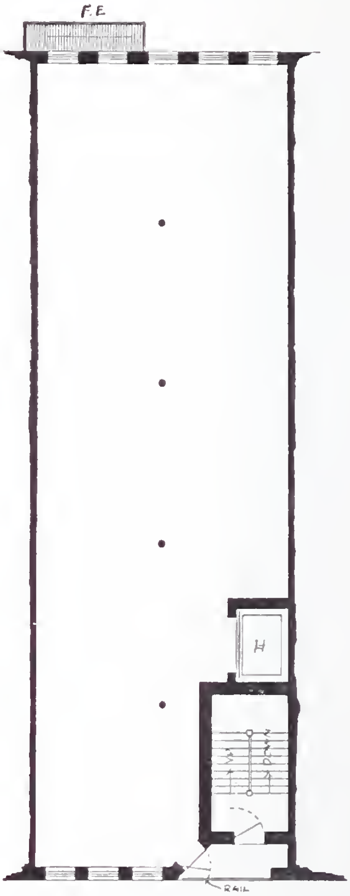


FIG. 22.—PLAN OF A PHILADELPHIA FACTORY.

F.E, Fire-escape. H, Goods Lift.

An objectionable feature of the form of "tower" fire-escape as specified by this ordinance is the permission it gives for it to be made in circular form at the lower end. Fig. 20 [p. 62] illustrates an old form of tower fire-escape, which, however, is now out of date. Circular stairs are, as a rule, quite unsuitable for purposes of exit in time of need. Fig. 21 [p. 62] illustrates an effort to surmount the possibility of an external staircase becoming impassable through smoke and flame entering the enclosure through doorways. The circular iron staircase is attached to the face of the building and enclosed in corrugated iron sheeting, with approaches on either side along small balconies.

The Philadelphia requirements as to means of escape are also contained in a Pennsylvania State law. The "tower" staircase above referred to is applied generally to new buildings where escape is required. Figs. 22, 23, 24, and 25 illustrate the plans of this form of stairway. Fig. 22 shows the "vestibule tower" stairway. A brick-enclosed staircase is erected adjoining the main street front. Entrances to the floors and the staircase are provided off a concrete "vestibule" at each floor level. Fire on the building cannot reach the staircase which is the exit in every-day use by the employés. In this example a brick-enclosed lift with fireproof doors is used for the transference of goods from floor to floor; and as the floors are unpierced by other openings, the risk of fire spreading upwards is slight. Should a fire break out on any floor near the front window, a light iron external balcony ladder is provided at the opposite end of the building for escape.

Fig. 23 illustrates a "balcony tower" escape in which an external balcony takes the place of the concrete landing provided in the "vestibule" escape. This plan shows a floor of a tenement factory in which power, light, &c. are supplied to the occupants by the owner of the building. The main entrance stairway enclosure contains a freight and passenger lift, and is used in common by the various tenants: under such circumstances this staircase cannot be considered as a good means of escape, as the landings may be lumbered with goods. The fire risk inside such a staircase enclosure is considerable. To meet this risk a properly separated staircase is provided at the other extremity of the building, and as this staircase is used by the employés in entering and leaving the building, it has been found to be a satisfactory form of exit in time of emergency.

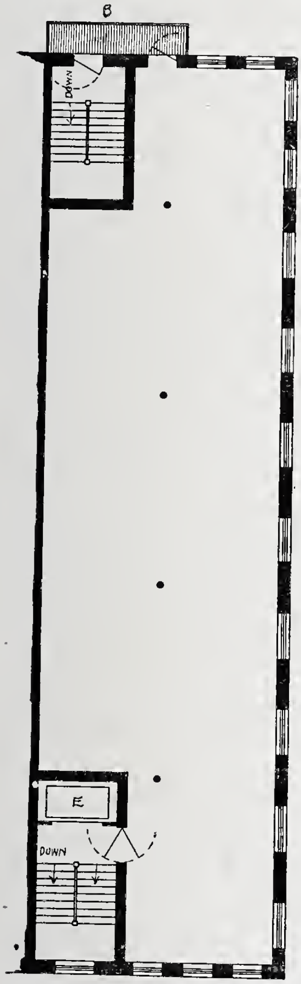


FIG. 23.—PLAN OF A PHILADELPHIA TENEMENT FACTORY.

B, Balcony. E, Passenger or Goods Lift.

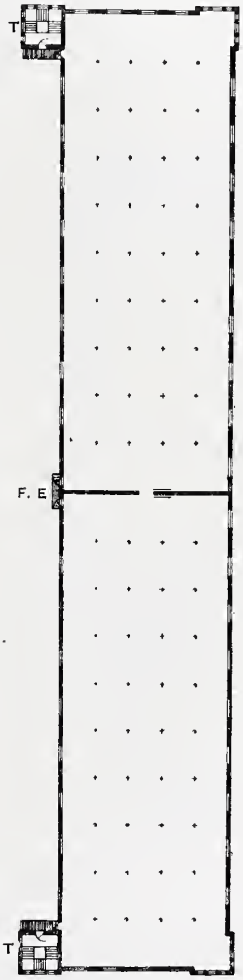


FIG. 24.—PLAN OF A PHILADELPHIA FACTORY.

F. E, Fire-escape. T, Tower Staircases.

Fig. 24 shows a plan of a large manufacturing establishment in which many persons are employed. A party-wall with openings protected with doors divides the fire risk. Stairs entirely separated from the main building are constructed at each end of the block, and as an emergency exit an external iron fire-escape is provided in the centre of the building, approached by balconies from windows on either side of the party-wall.

Fig. 25 illustrates some of the exit stairs provided on one side of a large store building in Philadelphia. Here balconies extend for a considerable distance along the front communicating with two isolated stairways delivering directly at pavement level. On this frontage the whole of the windows are glazed with wired glass and further protected by sprinklers attached to each window-head.

The Building Department in Philadelphia have under consideration a specification governing the construction of these tower stairways by which an objectionable constructional detail in some of these staircases will be rectified. In one of the large factories a false alarm of fire was raised, and, as the door leading into the staircase opened directly opposite the balustrade around a central well-hole, the employés were crowded together at this point, and about twenty or more were trampled to death or hurled over the balustrade down the well-hole.

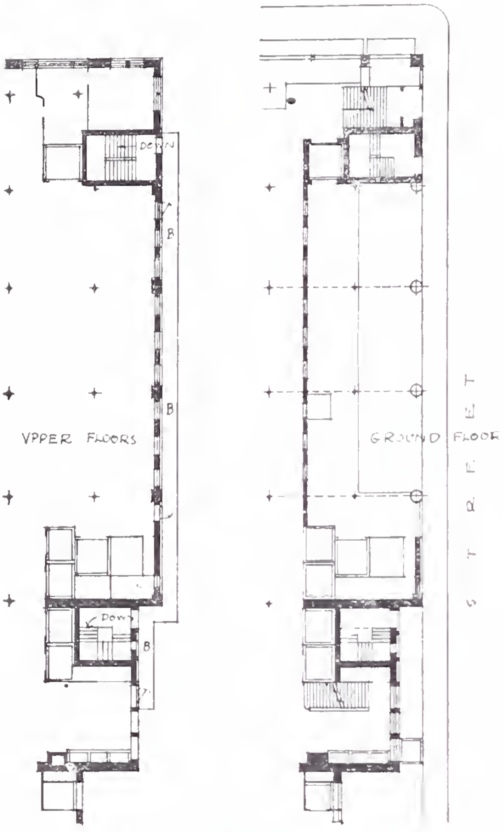


FIG. 25.—PLANS OF ESCAPE STAIRS AT A PHILADELPHIA DRY GOODS STORE.

B, External Iron Balconies.

The doors giving access to all such stairs should be planned so as to open opposite the downward flight, and so as not to interfere with the passage of persons down the staircase.

In many buildings, such as hotels and stores, the existence of exits, staircases, fire-escape, &c. is prominently announced by placards and illuminated signs. In all buildings in which persons are employed, or to which the public have access, it seems absolutely essential that specific directions should be given as to the lines of escape. The risk of panic is increased by ignorance of the direction and position of the means of escape.

I submit the following conclusions :—

1. American opinion demands that adequate fire protection for life should be provided in all buildings, irrespective of size and occupation. If a building be structurally unsafe for occupation, it is pulled down ; if it be insanitary and the defects are not made good, it is declared unfit for habitation ; and if it be used for illegal purposes, it becomes a public nuisance and is closed up. The question in these cases is not as to the number of persons who may be injured if the building should fall, or may be affected by its condition. I recommend that the fire risk to life should be considered upon somewhat similar lines. The law should not permit a person to expose himself or those within his premises to a preventable risk from fire. Further, in every respect fire is a public danger, whereas a ruinous or insanitary building may only affect the welfare of private individuals. As is well known, fines are sometimes inflicted for permitting a flue or chimney to become ignited. This, to a large extent, affects the occupants of the poor and ill-constructed dwellings only. The occupants of extensive premises, who, by indifference to fire risk and by reckless proceedings, may originate a huge conflagration, should not be

unrestrained by the authorities, especially when, in addition to the destruction of property, lives are jeopardised.

2. All important American buildings are constructed of fire-resisting materials, and the majority of ordinary buildings are by law compelled to be constructed in a similar manner. It is frequently contended that in England financial considerations debar this form of construction, and that were it compulsory rents would be prohibitive, and that property would be depreciated in value. While, to a large extent, the cost of construction, especially in the case of the poorer type of dwellings, would be increased, the actual increase in practice would not be great. Many simple methods of fire-resisting construction for floors, roofs, &c. are available. They could be adopted with ease and economy were their use compulsory.

3. I recommend that the height of buildings should be limited. The American "sky-scraper," although a financial success, is an eyesore to a city and a menace to public health and safety.

Financial reasons should not have such weight as to enable property owners to erect their buildings to an unlimited height, nor should the measure of the public fire brigade service alone reduce the height of buildings to an unprofitable minimum. The height of a building should be regulated primarily upon sanitary lines. The New York State Tenement House Law limits tenement houses to a height not exceeding one and a half times the width of the streets on which they front. It is reasonable to suggest that, as many persons pass the larger portion of their lives within the precincts of factory and commercial premises, such premises should be provided with a measure of light and air at least equal to that demanded for tenement houses.

4. I recommend that buildings should also be restricted in floor area. It is suggested that 5,000 feet should be the general limit of undivided floors. Increase beyond this should only be permitted where special business requirements absolutely demand it.

There are many establishments, such as drapery houses, which need special attention as regards fire risk. The floors are filled with loose inflammable goods, and at certain seasons the premises are packed with customers. A fire alarm would create a panic, and disaster would probably ensue unless those in the building were at once led into the open air or into another part of the premises unaffected by smoke or flame. It is a question whether any practical staircase could be planned to cope adequately with a sudden rush upon the level of, say, 500 persons.

Inflammable goods should also be guarded by automatic water sprinklers or similar devices. These appliances will retard a fire if they do not entirely quell it, and in this way they directly protect those persons who through injury or incapacity have been unable to avail themselves of the ordinary exits.

5. I suggest that every precaution should be taken to prevent fires spreading beyond the floor in which they originate. Well-holes, lifts, skylights, and other "flues" throughout a building should be completely protected. Wire-glass is now a practical commodity, and windows and skylights are not now the same element of risk as hitherto.

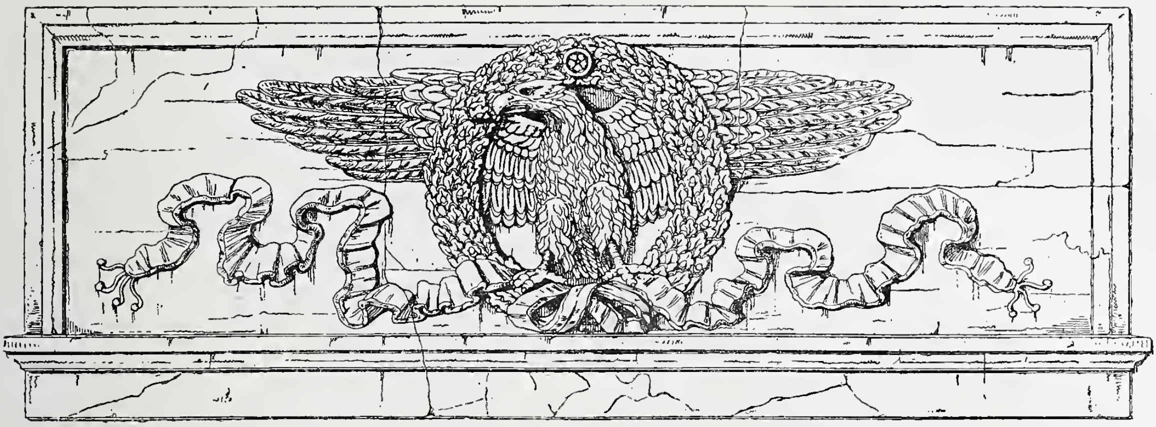
Lift doors should be so arranged that they cannot be left open by carelessness or accident. Stairs should be entirely cut off from the main building, not alone in order to prevent fire and smoke ascending and attacking the upper floors, but mainly in order to secure under every circumstance clear lines of exit.

6. American opinion is in favour of a form of escape in case of fire which leads persons outside the burning building; a division wall is an admirable contrivance, even though the means of escape on either side are in themselves indifferent. Where this is impossible, staircases are the only practicable form of escape. Ropes, ladders, and shoots are dangerously

impossible substitutes for staircases. The staircases should be against outside walls, and should be so planned that they may not be attacked by flame or smoke in the event of a fire within the building to which they belong. I suggest that the staircase as adopted in Philadelphia, and indicated in Figs. 22, 23, 24, and 25, fulfils all requirements upon this head. They should have straight flights and handrails, and the approaches should be such as to allow rapid and easy exit.

7. Many practical men contend that staircases for the above purposes should not exceed 3 feet 6 inches in width. This width permits the two lines of persons to descend rapidly, aided by the handrails on either side. A third line of persons in a wider staircase without the aid of a handrail is a danger. Staircases should be provided so that no person escaping is compelled to travel on any floor level more than the distance, viz. 100 feet. For practical purposes the number of persons for which a staircase is available as an escape on an emergency is regulated by the number it can contain within its enclosure from top to bottom. Thus in a story 15 feet high a staircase 3 feet 6 inches in width would accommodate about 100 persons upon the steps and landings. These persons could be employed in a factory upon a floor space of 2,500 feet. It therefore appears that a building should possess at least one such main exit staircase for each 2,500 feet of area. In less crowded buildings than factories these figures will of course be modified.

In conclusion I suggest that fire protection is a wise and profitable investment for the employer of labour, as well as for the property owner. For the city it implies a small but efficient fire brigade, while for the community at large it provides relief from a most terrifying danger.



CAMILLE ENLART ON ECCLESIASTICAL ARCHITECTURE IN FRANCE.*

By Professor Baldwin Brown, M.A. [*H.A.*]

THE volume before us in its size and appearance recalls a very old friend, the *Abécédaire* of Arcisse de Caumont. That part of de Caumont's work devoted to " Architecture Religieuse " covered the same ground that is now surveyed by M. Enlart. It was published under the title of *Abécédaire, ou Rudiment d'Archéologie* in 1850, though the matter contained in it had been put forward in some tentative shape by the author a quarter of a century earlier. De Caumont's work was epoch-making. He embraced in a single survey the monuments, civil and military as well as religious, of all periods of the older history of France, and with sundry fellow-workers, whom M. Enlart praises in his preface, he established the scientific study of the national antiquities on a firm footing.

M. Enlart's book, it has just been said, reminds the reader at once of de Caumont's *Abécédaire*: the size, the paper cover, the look of the work when opened are the same; but it represents the result of half a century's further labour at the science which de Caumont did so much to establish. It is an original and independent production differing in extent and in contents from its predecessor, though formed to a certain degree on the same lines. The older work embraced in the single volume church fittings and decoration as well as architecture. M. Enlart promises us an additional volume on " le mobilier, le costume, la statuaire, la peinture, et l'iconographie," and in the present volume of 800 pages only touches on those fittings which have so intimate a connection with the fabric of a building that they must be taken into account before the building can be fully treated. Hence the complete manual when it appears will be a production of considerable bulk, and will contain the latest word on many archæological questions other than those strictly within the domain of architecture.

For M. Enlart's work is a mine of information, a book to possess and to refer to on all questions relating to the religious architecture of France and the countries most closely in contact with France. The full bibliographical appendices, and the number of examples quoted in his notes as illustrating this or that special scheme or feature, are evidence of the thoroughness of his survey, and he presents his readers with an immense body of architectural facts, clearly and carefully stated, such as are nowhere else to be obtained. It is at the same time a book for students rather than for the general reader. It presents a type of the book architectural of a kind for which in this country there is little encouragement. Abroad, in France and Germany, the archæology of the arts is a subject of serious and systematic study in schools and seminaries, where it is taught as regularly as if it were engineering or natural philosophy. With us these archæological studies are generally taken up later in life as a matter of personal taste and penchant, and pursued in a more independent fashion. The ultimate result in our own case is often as good as the product of Continental education, but the British archæologist, as it were, *grows*, while in France and Germany archæologists are made. There is accordingly a demand on the Continent for solid business-like handbooks for the student which appeal to a distinct learned class. How impossible, for example, would be in Britain the publication of such a work as the *Kunstdenkmäler der Rheinprovinz*, now publishing at Düsseldorf under the general editorship of Paul Clemen. Here a systematic survey is offered of all the mediæval monuments in a large district of exceptional artistic wealth. All the churches and other old-time buildings of any interest are described and figured, while there is appended a summary of all available documentary evidence bearing on their history. Graceful little vignettes of picturesque "bits" give the work artistic charm. For a treatise on so large a scale, and so serious and scholarly, it would be hard in this country to find support.

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* *Manuel d'Archéologie Française*, Première Partie, Architecture. Par Camille Enlart. I. Architecture Religieuse. Paris: Picard, 1902.

To this type of work belongs M. Enlart's *Manuel*. The general reader will miss in it the large page, the artistically wrought illustrations, the literary excursions, the note of personal predilection, to which we are accustomed in our more outwardly attractive architectural volumes. It is when from the position of the general reader he advances to that of the serious searcher after truth that he will realise the high value of this very important contribution to architectural literature.

It is, of course, impossible to follow the author into the ramifications of his work, or to discuss the numerous topics of interest which strike the reader during its perusal. A general idea of the contents of the volume may first be offered, while some views of the writer which invite criticism may subsequently be discussed.

The first chapter, entitled "Définitions et Principes," contains a useful explanation of architectural forms with the technical terms applied to them. For the word "ogive," it may be noted, M. Enlart repudiates the sense of "pointed arch" which de Caumont had applied to it, and with him, as with the French archæologists of the day in general, "voûte d'ogives" means a ribbed vault. The rib he derives (p. 38) from Roman work, and states, without referring to examples, that the Romans sometimes marked the groins of their intersecting vaults with "nervures saillantes" (p. 443), generally of plaster (p. 38). The undergirding ribs of Roman barrel vaults, copied in the Romanesque barrel vaults of the South of France, are surely more likely models for the Gothic rib than these plaster nervures, which we confess never to have come across.

In regard to proportions he makes the sound remark that "l'art libre et raisonneur du moyen âge n'a pas de modules." The scale in Gothic is the scale of nature, its unit the human form. Formulas and geometrical schemes are the marks of an art in its decadence.

A particularly interesting section of this preliminary chapter is that entitled "Habitudes et Condition des Artistes au Moyen Age." In the Romanesque period the monks, in the Gothic the bishops, took the lead, and under the latter worked master-masons and "maîtres d'œuvres," who organised their "chantiers" and directed the labours of large bodies of trained stone-cutters. "The master of works or mason," writes M. Enlart, "exercised at will all the functions which are now divided among engineers, architects, draughtsmen, labourers, and contractors. It depended, as a rule, on the convenience of their clients whether they performed all these functions at once, or effected a division of labour." The appellations in use for the various adherents of the building craft, at a time before the word "architect" was introduced, make an interesting collection, but one of the most characteristic is omitted. Early in the eleventh century Dudo de St. Quentin writes of a building expert consulted by Duke Richard I. of Normandy as "petrarum faber architectoriâ arte peritus," and at this period the expression "architectoria ars" is certainly noteworthy. Some technical discussions, and a very sensible note on the use and abuse of literary evidence for dates, recalling a paper of no very distant date in the JOURNAL R.I.B.A.,* bring this introductory chapter to a conclusion. There is perhaps a too optimistic ring about the prophecy with which it ends, to the effect that "a thorough and attentive examination, a study guided by sound criticism, will almost always resolve the more or less complex problems presented by ancient buildings."

Chapter II. is on the Roman and the Merovingian periods, and is, of course, more archæological than artistic in character. We note with some surprise that the author seems still to believe in the legend of the systematic conversion of Gaul in the third century by seven bishops, formally commissioned by the See of Rome. This is only one degree more credible than our own now exploded Lucius-Eleutherus fable. The oldest church in France M. Enlart believes to be the so-called baptistry, restored by some as an old entrance gateway,† like that at Lorsch, dedicated to St. John at Poitiers, and he ascribes this to the sixth century. The crypt of Jouarre is of the seventh. The crypt or chapel of St. Mellon at St. Gervais, outside Rouen, commonly reckoned Gallo-Christian, M. Enlart dates, on the strength, no doubt, of the capitals of the columns of the exterior arcading, in the tenth century. The Basse-Œuvre, Beauvais, was built by Bishop Hervé at the close of the tenth century. Vieux-Pont-en-Ange is ascribed to the same date.

It will be seen from the above that M. Enlart belongs to the school the tendency of which is to date in late—or post—Carolingian times many of the early French churches that have been claimed for a Merovingian or Gallo-Roman origin. There is, however, one consideration of some weight, based on comparative evidence, that inclines one towards the earlier epoch for this class of monuments. There is a style of work represented at St. Jean, Poitiers; Cravant; St. Christophe, Suèvres; Savenières (Maine et Loire), and other places, in which the facing, in the main of "petit appareil," is diversified by a studied mosaic, in which geometrical patterns are formed by zigzags, hexagons, herring-bone work, stars, &c. We can hardly help being reminded here of that sumptuousness in personal attire and accoutrement that characterised Merovingian princes and nobles, and it is noteworthy that this elaborate facing is characteristic of the western part of the Frankish dominions. There are only two examples of it towards the eastern part, the so-called "Clara-Thurm" at Cologne, regarded as Merovingian, and the well-known little structure at Lorsch, near Worms, on the Rhine. About this M. Enlart adopts the old view that it was the mortuary chapel of Louis the German, dating from about 880. A visit to the building, or even a glance at the plan of it and of its surroundings, shows quite clearly that it was not a chapel at all, but a gate-house, giving admission to a court or atrium before the abbey church, the desecrated remains of which are still extant. Dr. Adamy, who has published it, brings forward very strong evidence to show that it dates more than a hundred years earlier, or about 770, and that it was erected under influence from the western, or Neustrian, part of the Frankish empire, so that it would represent the same tradition as Cravant or St. Jean, Poitiers. Now it is a fact that none of the known Carolingian buildings from the minster at Aachen downwards exhibits the decorative facing, though if it were Carolingian we should certainly expect to find it there, or on the basilica of Eginhard at Michelstadt in the Odenvald, or in Reichenau, or at Werden, or any of the other datable buildings of the true Carolingian time. Why, if Cravant, &c., are Carolingian do we not find this same technique in German examples of the same epoch? If, on the other hand, the decorative facing represent a tradition older than Carolingian times the anomaly is explained.

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* On the Comparative Value of Documentary and Architectural Evidence in establishing the Chronology of the English Cathedrals. By Francis Bond, M.A. JOURNAL R.I.B.A., 26th November 1898.

† *Die fränkische Thorhalle zu Lorsch.* Darmstadt, 1891.

There follow next in the book two full chapters, of more than two hundred pages each, on the "période romane" and the "période gothique," each closed by an extended bibliography and list of examples. The list of Gothic churches covers by itself thirty-six pages, and this is only an illustration of that conscientious thoroughness which is the outstanding characteristic of M. Enlart's work. The usefulness of the book to the genuine student, for whom we have already shown it to be intended, would have been largely increased if it had possessed an index. This want of an index is a great practical defect in a work designed for reference not mere perusal. In reading the work straight through, innumerable remarks about innumerable buildings strike the eye and are vaguely remembered. In the absence of an index it is often difficult and always wasteful of time to hunt up again the particular reference that we want to re-peruse or verify. Failing an index, it would have been of no little help had the list of examples at the end of each chapter contained references in brackets from the name of each monument mentioned in the text to the page where the notice would be found.

No analysis of these long chapters containing more than half the book can be attempted here. All students of the architectural periods they cover will readily recognise their value, though this would be greatly increased, as we have just seen, by facilities for reference. The general reader, whom it is not well, even in a scholarly work, to ignore, will be inclined to offer a criticism from the point of view of literary effect. Viewing, not these two chapters alone, but the work as a whole, and with a full recognition of the severely scientific aim of the writer, the reader will yet point to a certain want of accent in the treatment, tending to reduce the contents of the book to a vast collection of co-ordinate facts each one of which has much the same importance as all the rest. There is a want of relief and a somewhat prosaic sameness throughout the chapters that might have been avoided had the author indulged himself and his readers in a literary treatment of some of the topics, or brought out into greater prominence some specially important movements or periods. The impression one derives from a perusal of the pages is that the number of facts at the disposal of the author was so great that he had to prune away all literary adornments, and make his statements, whatever their relative importance, equally concise.

For example, readers who remember a brilliant chapter in the *Art Gothique* of Louis Gonse will turn to M. Enlart's pages expecting to find some general appreciation of the age that saw the birth of Gothic, some sketch of the moral, social, and intellectual forces that were stirring in the world of the times. The subject is, however, dismissed in half a page, and we are taken on at once to the schools of Gothic, to its reception abroad, and then to the monuments. We receive little aid towards forming a just idea of what a Gothic monument is in its essential character, as apart from this or that particular type or example.

Again, when dealing with that very large and important subject the schools of Romanesque the author indulges in no excursus, but characterises each school in France and abroad in a few clear and well-chosen words and passes on.

In connection with the growth of the Romanesque style out of the early Christian it is natural to turn to see what the author has to say about those early Merovingian churches at

Tours, Clermont, and elsewhere, known only from descriptions, which appear to have shown innovations on the simple basilican form, similar to those our own Wilfrid seems to have made in his churches at Hexham. The buildings are mentioned in the *Manuel*, page 122 *f*, but on a moment in architectural history so interesting we would have welcomed a digression.

M. Enlart would no doubt reply that the scheme of his book did not lend itself either to literary disquisitions or to the discussion of monuments the restoration of which must necessarily be problematical. Allowing this, it must at the same time be pointed out that a flat treatment comes dangerously near to dulness, which in a subject such as the development of Christian architecture should at all hazards be avoided.

M. Enlart, with that sincerity and love of truth by which he is distinguished, invites criticism in view of a second edition. We have already pointed out the need for an index, and may add here a few words of criticism on one aspect of his general treatment of mediæval art.

The author shows the eminently sane and practical character of his mind in his refusal to be led away by any of those semi-mystical notions which have done much to obscure architectural history. He repudiates, for example, p. 60, the idea of a symbolic use of geometrical figures in the ordinance of the form of churches. "Lorsque nous découvrons des figures dans la lune et dans les nuages, c'est nous qui les mettons." We are glad to see also, p. 91, that he rejects the somewhat fanciful hypothesis that Western Romanesque was in any respect directly inspired by the early Christian monuments of Central Syria. On the other hand, M. Enlart is not emancipated from a curious preconception, very common among his countrymen, that consists in a kind of obsession with the idea of Byzantine influence, which is seen sometimes in the most unlikely quarters. The Germans have for the most part got rid of this preconception which was once almost universal, and Schnaase's epoch-making chapter on the "Byzantine Question" in his *History of the Arts of Form* has given Teutonic scholars a wholesome scepticism about the dependence of Western art upon this far-off and semi-mythical source of influence. In the department of "Kleinkunst" Byzantine-carved ivories, enamels, and other portable objects were certainly carried into the West and affected native production, but the influence of Byzantine architectural models has been much exaggerated; and as for monumental sculpture, after the iconoclastic movement this did not exist at all in the Eastern Empire, and so cannot well have affected Western carving. St. Mark's at Venice may be Byzantine, and the domes of Périgord are Byzantine in form, though, as Dehio has shown, they are not constructed according to Byzantine technique. One theory of the origin of the cubical cap, so characteristically German, derives it from Byzantium, and if the "cistern of the thousand columns" at Constantinople, which shows the form, be, as its latest investigator believes, of the time of Justinian, the above theory would be greatly strengthened. On the other hand, to call the minster at Aachen "Byzantine" or "Oriental" is surely quite unnecessary.

M. Enlart (p. 175) speaks of the early vaulted churches of Western Europe as "imitées des églises voûtées de l'Empire de l'Orient," and specially singles out as Byzantine the Aachen Rotunda. This is, of course, modelled on San Vitale at Ravenna; but the assumption that San Vitale is Byzantine is quite gratuitous. It was begun in 526 * under Gothic rule, though finally completed after the transfer in 539 of the political headship to Justinian. SS. Sergius and Bacchus at Constantinople was not put in hand till after San Vitale was begun; Sta. Sophia till the latter was nearly finished; while, on the other hand, the elements out of which the scheme of San Vitale is formed existed already in the West, as at Sta.

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* The dates are given in Mothes, *Die Baukunst des Mittelalters in Italien.* Jena, 1884, p. 214.

Costanza by Rome and San Lorenzo at Milan. The central plan and the dome were in the earliest Christian epoch as much Western as Eastern forms, and it was only after Justinian that the specifically Byzantine architectural style was established. Even after this definite creation of the Byzantine style, it is very hard to find any real evidence of its influence on Western buildings. Bishop Meinwerk, of Paderborn, early in the eleventh century was said to have erected his chapel, which still exists north of the Dom, "per Græcos operarios." It is true that the vaults of the chapel are domical, but the capitals of the shafts from which they rise have nothing Byzantine about them, but are just examples of the debased composite capitals not unknown in early German Romanesque.

In view of the fact that the theory of Byzantine influence when subjected in special instances to criticism so often breaks down, we would suggest a reconsideration of some of the passages in the *Manuel* where Western forms are explained by Oriental derivation. The general view of the author is expressed in the words (on p. 108) "after the fall of the Empire of the West the Western people sought their models and their inspirations in the still flourishing Empire of the East," and we cannot but think that the sentence is a very misleading one. One or two examples in which this predilection seems to have warped his judgment are subjoined.

M. Enlart justly characterises Byzantine carved ornament as exhibiting a graphic rather than a plastic character (p. 355 *f*), but when he finds the same character both in Carolingian and in Arab art, which he says "issue from Byzantine," we cannot but feel that he is coupling together two very different kinds of work. Arab ornament, it is true, is graphic like Byzantine; but early Romanesque carving in the West is often very full and plastic in feeling. The fact that, as Springer showed long ago, the Western carver borrowed fantastic animal motives and monsters from Oriental textiles does not make the style of his carving Byzantine. The interlacing patterns common in early Romanesque decoration in the West were very likely derived from the guilloches in Roman mosaic pavements; but the fact that the guilloche is ultimately to be traced back to old Mesopotamian art does not make Oriental the interlacing patterns as we find them in Western Romanesque. In the sentence (p. 201), "The South of France, richer in débris and in traditions of the Roman epoch, and in more intimate contact with Byzantine sources, produces at times sculpture of fair merit, and ventures to attempt the rediscovery of the statuary's art," we would ask M. Enlart why Byzantine need be brought into the question at all. Anything less Byzantine than the Romanesque sculpture of Provence cannot well be imagined; and, moreover, it could not be influenced from Byzantium, for the simple reason that figure sculpture on a monumental scale was not there practised.

There is no space for any further discussion of points on which statements in the book before us might be questioned. We take leave of it with cordial congratulations to the accomplished author on the satisfactory accomplishment of the most important part of his allotted task.

9, Conduit Street, London, W., *6th Dec.* 1902.

CHRONICLE.

THE NOVEMBER EXAMINATIONS.

The Preliminary : Newly Registered Probationers.

The Preliminary Examination, qualifying for *Probationership R.I.B.A.*, was held in London and the undermentioned provincial centres on the 4th and 5th November. Of the 163 candidates admitted, 54 were exempted from sitting, and 109 were examined, with the following results :—

Centre	Number Examined	Passed	Relegated
London	61	39	22
Birmingham	13	10	3
Bristol	5	3	2
Leeds	10	7	3
Manchester	13	10	3
Newcastle	7	6	1
	109	75	34

The passed candidates, with those exempted—129 altogether—have been registered as Probationers. The following are their names and addresses :—

ALLEN : Newstead Adams ; Bisley Road, Stroud, Gloucestershire [*Master* : Mr. G. P. Milnes].
ANDREW : Alexander ; 38, Kay Park Crescent, Kilmarnock, Ayrshire, N.B. [*Master* : Mr. John B. Wilson *].
ATTLEE : Thomas Simons ; Westcott, Portinscale Road, Putney, S.W. [*Master* : Mr. C. E. Barry *].
BAIRD : William ; Cranstone Hotel, Southampton Row, W.C. [King's College],
BARLEY : Thomas Wrigley ; 5, Park View, Monton, Eccles, nr. Manchester [*Master* : Mr. John Gibbons].
BARNISH : Leonard ; 25, Aughton Road, Birkdale, Southport, Lancs. [*Masters* : Messrs. Deacon & Horsborough].
BARRY : Harold Douglas ; Ightham Rectory, Sevenoaks, Kent [*Master* : Mr. H. P. Monckton*].
BINNING : Alan ; 101, Shooters' Hill Road, Blackheath, S.E. [*Masters* : Messrs. William Wallace & Gibson *].
BLACKSHAW : Warren, jun. ; Goytholme, Brinnington, Stockport [*Master* : Mr. C. R. Locke].
BLUHM : Quentin Mangnall ; Glencoe, St. Anne's-on-the-Sea, Lancs. [*Master* : Mr. Edward Hewitt*].
BOOTH : Kenneth Williams ; 172, Lewisham High Road, Brockley, S.E. [*Masters* : Messrs. Edward Hide & Son].
BOWER : Albert Egerton Lance ; Warren Road, Blundellsand, Liverpool [*Master* : Mr. Arnold Thornely *].
BROAD : Frederic Arthur ; Manton Villa, Oxford Road, Bournemouth [*Master* : Mr. Frederic Broad].
BROOKSBY : Frank ; 5, Shaftesbury Terrace, Wellington, Salop [*Master* : Mr. C. R. Dalgleish].
BRYAN : Arthur Francis ; The Limes, Willoughby, Waterless, Lutterworth [*Master* : Mr. William M. Cowdell].
BULLOCH : Archibald ; 99, Amesbury Avenue, Streatham Hill, S.W. [*Master* : Mr. J. Findlay].
CABRE : José Watson ; 38, Thackeray Street, Princes Road, Liverpool, S. [University College, Liverpool].
CAINE : Allen Flinders ; 33, Buckland Crescent, Belsize Park, N.W. [*Master* : Mr. R. Frank Atkinson].
CLARK : Duncan Walter ; 2, Amyand Terrace, Richmond Road, Twickenham [*Master* : Mr. Howard Goadby].
CLARKE : Godfrey L. ; The Vicarage, Steeton, Keighley [*Masters* : Messrs. Bedford * & Kitson].
CLARKE : Nevile Simpson ; Summerville, Westwood, Beverley [*Masters* : Messrs. Botterill, Son, and Bilson*].
COLLINGS : Harry ; 93, Victoria Road, Scarborough [*Master* : Mr. James Petch].
CORFIELD : Claud Russell ; 62, Stanmore Road, Edgbaston, Birmingham [*Masters* : Messrs. Ewen Harper & Bros].
CRUMMACK : Reginald Harker ; 11, Albion Terrace, Hartlepool [*Master* : Mr. Harry Barnes*].
DAVIS : Claude William ; Parklands, 288, Pershore Road, Edgbaston, Birmingham [*Masters* : Messrs. Crouch & Butler].
DEMPSTER : Stanley Matcham ; 17, Ossington Street, Bayswater [*Master* : Mr. C. Stanley Peach*].
DICKINSON : William Francis ; 162, Buckingham Palace Road, S.W. [*Master* : Mr. A. J. Bolton*].
DREWITT : Colin Minors ; 11, Bath Street, Southport, Lancs. [*Master* : Mr. G. S. Packer].
EMERSON : Harry Valentine Milnes ; 11, Haydon's Park Villas, Gap Road, Wimbledon, S.W. [*Master* : Mr. W. W. Eldridge].
EMERY : Harold Carpenter ; 96, Denton Road, Hornsey N. [*Master* : Mr. George Hubbard *].
FAIRWEATHER : Clement Wilson ; 3, Queen's Road, Newcastle-on-Tyne [*Master* : Mr. J. W. Dyson].
FOLLETT : Sidney George ; 22, Fountainhall Road, Edinburgh [*Master* : Mr. Hippolyte J. Blanc,* R.S.A.].
FOSTER : Gains ; 22, Wellesley Road, Ilford, Essex [*Master* : Mr. L. W. Robinson].
FRASER : Hubert Henry ; Gauthorpe House, York [Uppingham School].
FULTON : Andrew Wilfrid ; 68, Kingsley Road, Liverpool [University College, Liverpool].
GANDY : Edward Hall ; 241, Tettenhall Road, Wolverhampton [*Master* : Mr. F. T. Beck].
GEORGE : Walter Sykes ; 99, New King's Road, Fulham, S.W. [*Masters* : Messrs. Thomas George & Son].
GOLDIE : Joseph J. ; 28, Nevern Square, Earl's Court, S.W. [*Master* : Mr. Edward Goldie].
GOVAN : James ; Main Street, Wishaw, Scotland [*Master* : Mr. James Cowie].
GRANT : James Hubert ; 21, Chapel Street, Hyde, Cheshire [*Master* : Mr. Ernest Woodhouse].
GRANT, Thomas Francis Wiltshire ; The School House, Felstead, Essex [Felstead School].
HACKING : Edward Hartley ; 50, Blackfriars Street, Manchester [*Master* : Mr. N. Hartley Hacking].
HAMPTON : Clarence Lambert ; Oxford Lodge, Wimbledon Common, S.W. [*Masters* : Messrs. George Hubbard * & Albert W. Moore].
HART : William Kingsford ; Oxford House, St. John's, Wakefield [Wakefield Grammar School].
HARVEY : Edwin Harry ; 30, Bradford Road, Southsea [Technical Institute, Portsmouth].
HAWKES : Reginald Wilson ; Engadine, Stratford-on-Avon [*Master* : Mr. E. G. Holtom.
HELM : William Frederick ; Victoria Road, Woolston Hants [*Master* : Mr. Charles H. Brightiff].

HEPBURN : James William ; 4, Camden Street, N.W. [*Master* : Mr. James Lindsay *].
HILL : Dennis; 27, Pattenden Road, Catford, S.E. [*Masters* : Messrs. C. S. Peach * & C. H. Reilly *].
HILLERNS : Oswald Hero Wilhelm ; Oldenburg Villa, Hessle, E. Yorkshire [*Master* : Mr. B. S. Jacobs].
HODGSON : Frederick John Whitlock ; Fairlea, Avenue Road, Bournemouth [*Master* : Mr. W. Hargreaves Bourne *].
HOLBROW : Alfred Ernest ; 10, Clarendon Gardens, Maida Hill, W. [Polytechnic School of Architecture].
HOLLAND : Thomas ; c/o. Ernest Oxley, Esq., Architect, Clay Cross [*Master* : Mr. Ernest Oxley].
HONEYBURNE : Ernest Hardy ; 23, Duke Street, Southport [University College, Liverpool].
HOY : Percy Cartwright, Fern Cliff, Heaton Mersey, nr. Manchester [*Masters* : Messrs. Woodhouse * & Willoughby *].
HUDSON : Harry ; Westfield House, Shipley, Yorks. [*Master* : Mr. A. Ryshworth Hill *].
IOTHAM : George Francis ; Sandwich School, Kent.
JENNINGS : Samuel David ; 8, Anderton Road, Sparkbrook, Birmingham [King Edward's Grammar School].
JOHNSTON : Charles ; 163, Grosvenor Road, Westminster, S.W. [*Master* : Mr. A. M. Fowler].
JONES : Jacob Herbert ; 6, Priorton Terrace, Swansea, South Wales [*Master* : Mr. Charles S. Thomas].
JORDAN : Richard Thomas William ; 38, Tyne Street, North Shields [*Master* : Mr. Geo. R. Smith *].
KAY : George Alexander ; Victoria Chambers, Parliament Street, Ramsey, Isle of Man [Ramsey Grammar School].
KELLETT : James ; Wyke House, Castle Bar Hill, Ealing, W. [*Masters* : Messrs Barrow * & Brown].
KIRBY : Archibald ; Woodview, Hempstead Road, Watford [*Master* : Mr. Henry A. Saul *].
KNIGHT : John ; Fern Lea, Seedley Road, Pendleton, Manchester [*Masters* : Messrs. Whitelegg & Whittaker].
LAMB : Charles Alfred ; 189, The Grove, Hammersmith [Polytechnic, Regent Street].
LAMONT : Alexander Hay ; 24, Millar Crescent, Morningside, Edinburgh [*Master* : Mr. George Craig].
LAWTON : Robert Allison ; 4, King Street South, Rochdale [*Masters* : Messrs. Potts,* Son,* & Hennings *].
LEMAN : Alexander Joseph Leonard ; Netherton House, Old Town, Clapham, S.W. [*Masters* : Messrs. Searle * & Hayes *].
LEONARD : Frederick George ; High View, Maidstone Road, Chatham [*Master* : Mr. George E. Bond].
LEWIS : John Norman ; 22, Great George's Road, Waterloo, Liverpool [University College, Liverpool].
LOWICK : Henry Capell ; Little Brington, Northamptonshire [*Master* : Mr. M. H. Holding *].
McDONNELL : Frederick Hugh ; Afton Lodge, 95, Windsor Road, Forest Gate, S.E. [*Master* : Mr. A. H. Kersey *].
MACLAREN : Henry Stewart : 5, Tivoli Crescent, Brighton [*Master* : Mr. J. G. Gibbins *].
MANN : William Robert ; 8, Gordon Avenue, Leicester [*Masters* : Messrs. Goddard * & Co.*].
MARGARY : Herbert Young ; 9, Dafforne Road, Upper Tooting, S.W. [*Master* : Mr. G. A. T. Middleton *].
METCALFE : Cecil Broadbent ; 23, St. Andrew's Place, Bradford, Yorks. [*Masters* : Messrs. W. J. Morley * & Son].
MILBURN : William, jun. ; 8, Thornhill Park, Sunderland [High School, Sunderland].
MILNE : David ; 62, Sternhold Avenue, Streatham Hill, S.W. [*Master* : the late Mr. J. Murray Robertson *].
MUNDELL : James ; 61, Grosvenor Street, West Hartlepool [*Master* : Mr. Harry Barnes *].
MURRAY : Colin Hay ; 24, Gildrege Road, Eastbourne, Sussex [King's School, Canterbury].
NATHANIELSZ : Arthur Holman ; 12, Arlington Street, Glasgow [Richmond College, Galle, Ceylon].
NEWBOLD : Harry Bryant ; 31, St. James's Square, Notting Hill, W. [*Masters* : Messrs. Beazley & Burrows *].
NEWELL : Leopold Monk ; Brooklea, Ledsham, nr. Chester [*Master* : Mr. Edmund Kirby *].
NEWSTEAD : Stanley Graham ; 31, Kingswood Avenue, North Kensington [Polytechnic, Regent Street].
NICHOLLS : Leonard Sheldon ; Glenthorne, 38, Thornhill Road, Handsworth, nr. Birmingham [*Master* : Messrs. Gateley & Parsons].
OLIVER : Frederick George ; Embleton House, Tweedmouth, Berwick-upon-Tweed [*Masters* : Messrs. James Stevenson & Son].
PALMER : Herbert Alfred ; Clarence Villa, Chapel Street, Petersfield [*Master* : Mr. H. T. Keates].
POMPHREY : Thomas Canfield ; Maylea, Park Street, Wishaw, N.B. [*Master* : Mr. Alex. Cullen *].
POOL : Stanley ; 6, Hartington Street, Derby [*Master* : Mr. John Wills].
REIERSEN : Nils Olaf ; 1, Colville Square, Bayswater, W. [*Master* : Mr. A. N. Prentice *].
ROBERTS : William Henry Ernest : Harmony House, Melody Road, East Hill, Wandsworth [*Master* : Mr. W. Henry White *].
ROBERTSON : Alan Keith ; Wardie Bank, Boswell Road, Edinburgh [*Master* : Mr. Hippolyte J. Blanc,* R.S.A.].
RUNTZ : Ernest Munro ; Kingston Manor, Lewes, Sussex [*Masters* : Messrs. Ernest Runtz & Co.].
SAUNDERS : Raymond Alexander Richard ; 73, Howell Road, Exeter [*Masters* : Messrs. Tait * & Harvey].
SHAFT : James Walter ; Rival Lodge, Harting, Petersfield [*Master* : Mr. J. W. Walmisley *].
SHAW : William Gordon ; The Griffin, Witton, Blackburn, Lancs. [*Master* : Mr. Arthur R. Gradwell].
SHIELD : Cyril Ridley , 47, Westmoreland Road, Bayswater, W. [*Masters* : Messrs. Brown & Barrow *].
SHINER : Laurence Alexander David ; 6, Orsett Road, Grays, Essex [Palmer's School, Grays].
SLEIGHTHOLM : George Edward ; 124, Prospect Road, Scarborough [*Master* : Mr. H. Ascough Chapman *].
SMITH : Frederick Radford ; 62, Queen's Road, Leeds [*Master* : Mr. William Bruce].
SPENCE : Herbert Marshall ; Bank House, North Shields [*Masters* : Messrs. Liddle & Browne].
STEPHEN : Harry ; Bedford Vicarage, Leigh, Lancs. [*Masters* : Messrs. Banks, Fairclough & Stephen].
SULLIVAN : Basil Martin ; 8, Quarry Road, Hastings [*Master* : Mr. M. Sullivan].
SURMAN : John Burgess ; 10, Yew Tree Road, Edgbaston, Birmingham [*Masters* : Messrs. C. Whitwell & Son].
SUTCLIFFE : William ; 37, Pavement, Todmorden [*Masters* : Messrs. Sutcliffe & Sutcliffe].
SWAN : Thomas Aikman ; 7, Sylvan Place, Edinburgh [*Masters* : Messrs. Hamilton, Paterson, & Rhind *].
SYMES : William Charles ; 7, Bideford Mansions, Rosebery Avenue, E.C. [*Master* : Mr. George Hubbard *].
SYMINGTON : Herbert Andrew ; 18, Lincoln Street, Leicester [*Masters* : Messrs. Goddard * & Co.].
TODD : William James Walker ; 6, Comely Bank Road, Edinburgh [*Master* : Mr. T. P. Marwick *].
TOMLINSON : John William ; 22, Starley Road, Coventry [*Master* : Mr. Herbert Walker *].
TRYON : Wyndham Hugh Christopher ; Down Hall, Epsom, Surrey [Charterhouse].
TYLER : George Cecil ; Send Lodge, Send, Surrey [*Masters* : Messrs. W. G. Jones & Clinton].
UNSWORTH : Gerald ; 23, Buckingham Palace Road, S.W. [*Master* : Mr. F. T. Baggallay *].
WARDER : Richard Oliver ; London House, Erdington, nr. Birmingham [*Masters* : Mr. J. A. Chatwin * & Son].

WATERMAN: Frederick; Ivy Bank, Crown Hill, Norwood, S.E. [*Master*: Mr. A. Burnell Burnell *].

WEASER: Lawrence Thomas; 92, Rendlesham Road, Clapton, N.E. [*Masters*: Messrs. John Young, Son, & Johnson *].

WEBB: Maurice Everett, B.A., Cantab.; 1, Hanover Terrace, Ladbroke Square, W. [*Master*: Mr. Aston Webb, A.R.A.*]

WHEATLEY: Joseph Horace Lineham; 48, Warrior Square, St. Leonards-on-Sea [St. Mary Magdalen School].

WHITE: Percy Gordon; Wakehurst, Highland Road, Bromley, Kent [Architectural Association Day School].

WILLIAMS: John Hugh; 2, Craven Terrace, Leeds, Yorks [*Master*: Mr. W. G. Smithson *].

WILLIS: Walter Stanley; 71, Stanley Street, New Clee, Great Grimsby [*Master*: Mr. J. J. Cresswell *].

WILSON: Herbert John; Brinkdale, Park Road, Peterborough [*Master*: Mr. William Boyer].

WRIGHT: Arthur Edgar; 80, Durlston Road, Kingston-on-Thames [*Masters*: Messrs. Carter* & Ashworth *].

YOUNG: George; 16, India Street, Glasgow [*Masters*: Messrs. Thomas Dykes & Robertson *].

YOUNG: Robert Clifford; 2, Eastfield Road, Cotham, Bristol [Merchant Venturers' College, Bristol].

WESTWICK: Bertie Cecil; Hillcrest, Crow Hill Drive, Mansfield [*Master*: Mr. A. N. Bromley *].

WILLS: Gerald Berkeley; c/o Reginald Blomfield, Esq., 1, New Court, Temple [*Master*: Mr. Reginald Blomfield].

The asterisk (*) denotes members of the Institute.

The Intermediate: Newly Registered Students.

The Intermediate Examination, qualifying for *Studentship R.I.B.A.*, was held in London and the undermentioned provincial centres on the 4th, 5th, 6th, and 7th November. Ninety-eight Probationers were examined, with the following results:—

Centre	Number Examined	Passed	Relegated
London	67	40	27
Bristol	5	3	2
Glasgow	6	5	1
Leeds	7	2	5
Manchester	13	4	9
	98	54	44

The successful candidates have been registered as Students. Their names, given in order of merit as placed by the Board of Examiners, are as follows:—

WARWICK: Septimus [*Probationer* 1897]; 98, Lancaster Road, N. Kensington, W. [*Master*: Mr. R. S. Balfour *].

PARKER: Alfred Gwynne [*Probationer* 1899]; 27, North Villas, Camden Square, N.W. [*Master*: Mr. S. B. Russell *].

WILLATT: Herbert Attenborough [*Probationer* 1901]; 4, Pelham Road, Sherwood Rise, Nottingham [*Master*: Mr. Watson Fothergill].

HANSON: George [*Probationer* 1901]; 28, Southfield Square, Bradford, Yorks [*Masters*: Messrs. Mawson & Hudson].

CLARKE: John Daniel [*Probationer* 1897]; 84, Lancaster Road, Notting Hill, W. [*Master*: Mr. Arthur Green *].

MYER: George Val [*Probationer* 1900]; 157, Sutherland Avenue, W. [*Master*: Mr. John Belcher, A.R.A.*].

FORSYTH: Charles [*Probationer* 1900]; 33, West Cumberland Street, Glasgow [*Master*: Professor Charles Gourlay *].

SHEBBEARE: Henry Vivian [*Probationer* 1898]; 4, South Bank Terrace, Surbiton [*Master*: Mr. Edward W. Mountford *].

QUIRKE: William Dathy [*Probationer* 1901]; 22, Oseney Crescent, Camden Square, N.W. [*Masters*: Messrs. Samuel Knight * & Parkinson].

FOSTER: Frank Burwell [*Probationer* 1901]; 4, Euston Place, Leamington Spa [*Master*: Mr. Frederic Foster].

DYKES: George [*Probationer* 1894]; Wiston, Holmhead Road, Cathcart, Glasgow [*Master*: Mr. T. L. Watson *].

WAGSTAFF: Alexander [*Probationer* 1901]; 42, Old Dunbarton Road, Glasgow, W. [*Master*: Professor Charles Gourlay *].

GOODWIN: Charles John [*Probationer* 1900]; 4A St. John's Road, Croydon, Surrey [*Master*: Mr. R. A. Crowley *].

WOODSEND: Henry Edward [*Probationer* 1900]; 16, Villa Road, Nottingham [*Master*: Mr. A. N. Bromley *].

LOVELL: Charles Ernest [*Probationer* 1900]; 66, Darnley Road, Gravesend [*Masters*: Messrs. Rayner & Bridgland].

LOVEITT: Rowland Arthur [*Probationer* 1900]; Ivy Villa, Hereford Road, Abergavenny [*Master*: Mr. T. Taylor Scott *].

RICHARDSON: Henry John [*Probationer* 1899]; Pine Hurst, Hollington Park, St. Leonards-on-Sea, Sussex [*Master*: Mr. P. H. Tree *].

HUTTON: David Bateman [*Probationer* 1900]; 184, Woodlands Road, Glasgow [*Master*: Professor Charles Gourlay *].

JOHNSON: George A. [*Probationer* 1902]; Stafford Lodge, Stafford Road, Croydon [*Master*: Mr. Paxton Watson].

PATERSON: Claude [*Probationer* 1900]; Dudley House, Bowdon, Cheshire [*Master*: Mr. John Brooke *].

DANIELL: George Francis Blackburne [*Probationer* 1901]; 19, Fopstone Road, S.W. [*Master*: Mr. Aston Webb, A.R.A.*]

HAYWOOD: William [*Probationer* 1899]; 54, Newhall Street, Birmingham [*Master*: Mr. W. H. Bidlake *].

CUMMING: Tarras Talfourd [*Probationer* 1899]; 7, Christ Church Gardens, Reading [*Masters*: Messrs. Charles Smith * & Son *].

LANGMAN: Herbert [*Probationer* 1901]; 29, Shakespeare Street, Southport, Lancs. [*Master*: Mr. Francis P. Halsall *].

DONNELLY: Robert [*Probationer* 1901]; Lower Martello Terrace, Holywood, co. Down [*Masters*: Messrs. J. J. Phillips & Son *].

SKINNER: Martin [*Probationer* 1898]; Kent House, Beckenham [*Master*: Mr. Sidney R. J. Smith *].

STRATTON: Percy Montagu [*Probationer* 1901]; Quidhampton, Salisbury [*Master*: Mr. A. C. Bothams].

CRAWLEY: Percy George [*Probationer* 1900]; Aboyne Lodge, Woodston, Peterborough [*Master*: Mr. William Boyer].

SAWYER: Harold Selwood [*Probationer* 1900]; 45, Jewry Street, Winchester [*Masters*: Messrs. Colson * & Nisbett *].

HOOPER: Basil Bramston [*Probationer* 1902]; 21, Crowhurst Road, Brixton, S.W. [*Master*: Professor Beresford Pite *].

SIFTON: Isaac Taylor [*Probationer* 1900]; 230, Goldhawk Road, W. [*Masters*: Messrs. Read * & MacDonald *].

AGUTTER: Edwin Albert [*Probationer* 1898]; 26, Great James Street, Bedford Row, W.C. [*Master*: Mr. John I. Lee *].

BEAUMONT: George Neville [*Probationer* 1899]; 38, Bond Street, Wakefield.

BRYDEN: Andrew Francis Stewart [*Probationer* 1894]; 11, Lynedoch Crescent, Glasgow [*Master*: R. A. Bryden *].

BULLOCK: Albert Edward [*Probationer* 1900]; 45, Fairlawn Avenue, Chiswick, W. [Architectural Association].

COCKRILL: Owen Hanworth [*Probationer* 1899]; 12, Euston Road, Great Yarmouth [*Master*: Mr. J. Wm. Cockrill *].

COOKE: Isaac, jun. [*Probationer* 1895]; Kirkstone, Grosvenor Street, Liscard, Cheshire [*Master*: Mr. Henry Hartley *].

COOKE: William Henry Howard [*Probationer* 1901]; Badbrook House, Stroud, Glos. [*Master*: Mr. V. A. Lawson].

EDLESTON: Ernest Harcourt [*Probationer* 1899]; Dysart Buildings, Nantwich, Cheshire [*Master*: Mr. R. Bassnett Preston *].

ETHERINGTON-SMITH, B.A., Oxon: Harry Launcelot [*Probationer* 1901]; East Ella, Putney, S.W. [*Masters*: Messrs. Read * & MacDonald *].

HUMPHRY: Francis John [*Probationer* 1899]; Wansfell, Chesswood Road, Worthing [*Master*: Mr. Gilbert M. Simpson *].

HUNNISETT: Hubert [*Probationer* 1900]; 3, High Street, Rye, Sussex [*Master*: Mr. F. H. Humphreys *].

LOVELL: Percy Wells [*Probationer* 1900]; Lynwood, Highgate, N. [*Master*: Mr. Aston Webb, A.R.A.*].

MILLAR: Allan Scott [*Probationer* 1898]; 5, Victoria Square, Reading [*Masters*: Messrs. Millar & Cox].

MONSON: Christopher John [*Probationer* 1900]; Croft Lodge, The Park, Newark [*Master*: Mr. Harold Bailey *].

POTTER: Alan [*Probationer* 1899]; 43, Manchester Street, Manchester Square, W. [*Master*: Mr. Alfred H. Hart *].

PRYOR: Ernest Langman [*Probationer* 1901]; 28, South Street, Greenwich, S.E. [*Master*: Mr. A. Roberts].

SMITH: Harold Bayldon [*Probationer* 1896]; 17, Woburn Place, Russell Square, W. [*Master*: Mr. A. G. Bond *].

STUBBS: Rowland [*Probationer* 1897]; Fern Villa, Winsford, Cheshire.

SYKES: John Reynolds [*Probationer* 1899]; 40, Camden Square, N.W. [King's College].

TAYLOR: Edgar Raymond [*Probationer* 1898]; 17, Blomfield Street, Upper Westbourne Terrace, W. [*Master*: Mr. W. Henry White *].

THOMAS: Basil Walter [*Probationer* 1900]; St. Bede's Hill Lane, Southampton [*Master*: Mr. A. E. J. Guy].

TUCKER: Richard Froude [*Probationer* 1901]; Combe Lodge, Upper Teddington, S.W. [*Master*: Mr. T. G. Jackson, R.A.]

WHIDDINGTON: Henry Morgan [*Probationer* 1895]; 71, Queen Street, Cheapside, E.C.

The asterisk (*) denotes members of the Institute.

The Final and Special.

The Final and Special Examinations, qualifying for candidature as *Associate R.I.B.A.*, were held in London from the 14th to the 21st November. Of the 49 candidates examined, 20 passed, and the remaining 29 were relegated to their studies. The following are the names of the passed candidates:—

BENNETT. Robert [*Probationer* 1898, *Student* 1900]; Greenmoor, Buxton.

BROOKS: William Edward [*Probationer* 1900, *Student* 1901]; 7, Norris Street, Haymarket, W.

CHESTER: Frederick Billinghurst [*Probationer* 1892, *Student* 1898]; 208, Denmark Hill, S.E.

CROWLEY: Walter St. Leger [*Probationer* 1896, *Student* 1899]; Innisfallen, Teilo Street, Cardiff.

GREENWOOD: William [*Probationer* 1900, *Student* 1901]; 13, Fielden Street, Blackburn.

HIGSON: John Hindle [*Probationer* 1895, *Student* 1898]; Heber Villa, Preston New Road, Blackburn.

HOLT: Joseph [*Probationer* 1893, *Student* 1898]; The Limes, Hawthorn Lane, Wilmslow, Cheshire.

HOSKINS: Henry Joseph Bissaker [*Probationer* 1898, *Student* 1900]; 23, Longmore Street, Birmingham.

JONES: John Ivor Price [*Probationer* 1895, *Student* 1898]; Ashdene, Cathedral Road, Cardiff.

LETHBRIDGE: James Morton [*Probationer* 1898, *Student* 1900]; 9, Cholmeley Villas, Highgate, N.

MACLENNAN: Thomas Forbes [*Special Examination*]; 62, Colinton Road, Edinburgh.

MONRO: Charles Ernest [*Probationer* 1891, *Student* 1899]; Saxonholme, Bearsden, near Glasgow.

NICOL: George Salway [*Probationer* 1895, *Student* 1897]; Elmdon Lodge, Acocks Green, Birmingham.

PARKINSON: Charles Edmund Lancaster [*Probationer* 1899, *Student* 1900]; 101, Ladbroke Grove, W.

REES: Henry Treharne [*Special Examination*]; 11 Victoria House, South Lambeth Road, S.W.

SALMON: Nathan Thomas [*Probationer* 1895, *Student* 1897]; Castle Street, Reading.

TOWSE: Stanley [*Probationer* 1893, *Student* 1899]; Hillside, Ravensbourne Park, Catford, S.E.

WATKINS: William Henry [*Probationer* 1899, *Student* 1901]; Summerhill Road, St. George, Bristol.

WHITE: Horace [*Probationer* 1896, *Student* 1898]; Loughton, Essex.

WRIGLEY: Francis Carr [*Probationer* 1897, *Student* 1898]; 8, Barrowgate Road, Chiswick, W.

The following shows the number of failures in each subject of the Final:—

I.	Design	23
II.	Mouldings and Ornament	23
III.	Building Materials	14
IV.	Principles of Hygiene	12
V.	Specifications	8
VI.	Construction, Foundations, &c.	13
VII.	Construction, Iron and Steel, &c.	16

The Ashpitel Prize.—The Board of Examiners recommend that this Prize be awarded to Mr. William Greenwood, of Blackburn [*Probationer* 1900, *Student* 1901], he being the candidate who has distinguished himself most highly in the Final Examinations of the year.

Recent Additions to the Library.

In compliance with the request of the Hon. Secretary made at the close of last Session, there were laid upon the table at the Business Meeting on Monday some of the more important works which have been added to the Library since the June list was published.

Mr. ALEXANDER GRAHAM, F.S.A., in calling attention to them, said that the books were placed upon the table to afford members an opportunity of seeing how active the Literature Committee was on their behalf, as well as to show that their Library was gradually approaching a state of greater completeness. Gaps were being filled up—works on subjects not strictly architectural but useful to architects were constantly being added; and, speaking broadly, every contemporary work, whether published in this country or abroad and stamped by the approval of the Literature Committee, was acquired and placed immediately at the service of members in the Library. Amongst the books he wished particularly to call attention to was one on a subject interesting to them at the present moment because it related to concrete construction. The work was by M. Christophe, and called *Le Béton Armé*—i.e. iron or steel used in connection with concrete. The subject had come up prominently before them with regard to Vauxhall Bridge, which the Institute were anxious should be constructed of concrete faced with granite. What the result would be he was unable to say; but anyone who was interested in concrete construction would do well to look at this little book and see how admirably the subject was worked out. Formulæ were there given for every kind of what the author called "*ciment armé*," and its application to various kinds of construction. Coming to another subject totally different, he called attention to a book which they had long been in want of—viz. Förster's *Monuments d'Architecture, de Sculpture et de Peinture de l'Allemagne depuis l'établissement du Christianisme jusqu'aux temps modernes*, translated from the German into French. The work was in eight volumes, and he strongly recommended anyone interested in the history of German architecture from mediæval times down to 1860 to examine the book. It was printed before the days of photography, and the plates were all engraved; but he could not help thinking that anyone fully acquainted with the subject would find that the work had formed the basis of others that were more prominent and better known. Then there was another work entitled *Archives de la Commission des Monuments historiques*, in three volumes, which showed them how thoroughly their French friends carried out work of that kind when they put their hands to it, and he only wished that works of a similar kind could be brought out in this country under Government auspices. Then there were works quite new to them on the Renaissance in Sweden and Poland, which showed how the Swedes and the Poles had worked out the Renaissance according to their own ideas, totally different from ours, but adapted to their own climates and their own habits of life. Members would also find a very curious book which he was very glad the Literature Committee had purchased. It consisted of about sixty or seventy drawings by Hans Holbein printed on Japanese paper: the drawings were interesting to architects because the fillings-in were all of an architectural character, showing that Holbein was a master of a certain kind of drawing, and that he understood architectural decoration. Then there was a book which he might almost call unique—viz. Thiollier's *L'Architecture Religieuse à l'époque romane dans l'ancien diocèse du Puy.* So many of them knew that district that he recommended them to look into the book—for one reason, that everything in it was produced in Puy, and altogether it was very creditable to the people of that district. Then there was a book which perhaps would interest some of them more than any of the others—the work of one of the Pensionnaires of the École des Beaux-Arts. The subject he had taken up was the Baths of Diocletian, and it would be seen how thoroughly he had worked the matter out from the little there was to be seen there, and how he had restored the building. It was a kind of drawing that we did not encourage in this country for many reasons. In France the young architect, when he had finished his articles, gave up a certain amount of time to the study of some particular class of building, and anyone who was ambitious of a high reputation took up such a building as M. Paulin had done, and worked it out thoroughly. This matter of drawing touched upon the vexed question of how architecture should be represented in the Architectural Room at the Royal Academy. He would not enter into such a controversial subject, because they all held different opinions upon it. But if the question how architects' drawings should be exhibited at the Royal Academy were to be discussed at the Institute on some evening when they were not fully occupied, it would do a great deal of good, not only for architects, but for the public also. There was no reason why the Architectural Room should not be as attractive to the public as any other room at the Royal Academy. He trusted that next Session they would be able to give up a portion of an evening to the consideration of this subject. A most beautiful book on the table was the second edition of Mr. Penrose's *Athenian Architecture.* They already had a copy in the Library, but by good fortune they had come across this second one. It was a magnificent copy, bound in levantine morocco, and they intended to place it in the Reference Library and use the other in the Loan Library. He might mention a rather curious book-plate at the end with the motto, "Nyl ne sait qui n'essaye," and he should like someone to ascertain, if possible, where the book came from. It had evidently belonged to a lover of the book itself—a lover, he was going to say, of their dear friend Mr. Penrose. He should like to add a word with reference to the Loan Library. The Loan Library was increasing very largely—in fact, it was becoming a library of itself—and he thought the day was not far off when they should have to do something to make this valuable collection more accessible to their friends in the provinces. In the large provincial towns there were, of course, architectural libraries; but in many of the small towns and villages where their young architects came from, there was no opportunity whatever of getting new books. Some years ago, when he had the honour of being Chairman of the Literature Committee, he mooted the subject and endeavoured to arouse a little enthusiasm upon it; but he met with very little help. Difficulties were pointed out as to the way in which the books should be sent, in whose custody they should be placed, and who should bear the expense of carriage to and fro. He could not help thinking that if one of their provincial friends who knew something of the wants of young provincial architects would kindly give up a little time, not merely in inspecting their catalogue, but in coming to the Library itself and spending an hour or two with the Librarian, and looking at the actual books available, he might come to some conclusions on the subject, and be able to co-operate with the Institute in devising some system by which the books could be circulated so as to be more beneficial to their country brethren. He hoped that if mention of this were made in the JOURNAL someone would come forward and help to bring about this desirable result.

Mr. W. D. CARÖE, M.A., F.S.A. [*F.*], asked to be allowed to make a few remarks upon Mr. Graham's admirable address. Mr. Graham had referred to the French practice of reproducing in the form of monographs beautifully illustrated reproductions of historical buildings, with special reference to the three very fine volumes before them on the table. Mr. Graham referred to the transference to paper and to the restoration of the Baths of Diocletian by one of the French gentlemen of the Prix de Rome. They were all exceedingly jealous of the extraordinarily magnificent way in which the French illustrated their buildings, and they heartily concurred with what Mr. Graham said, and wished something of the same kind was done in this country. But there was another side to the question. The system in France of appointing year by year an eminent student who passed his time in Rome in learning how to restore on paper one of those ancient buildings had its evils. The French Government, when these distinguished students returned to their own country, seemed to consider it necessary that they should have some historical building put under their care. The result had been disastrous to the historical buildings of France. A man without any suitable training probably—if it were a Gothic building without the slightest care for the building itself, or any knowledge of its details or its peculiar methods—was turned on to make it into a new building. He produced with great care and pains a magnificent volume upon the building itself, and virtually transferred it to paper. The building, the actual stones, were wiped out and replaced by something that never was there before. He merely wished to call attention to that point because it was referred to in Mr. Graham's admirable address, and because, although he should be glad to see many fine books upon their historic buildings produced, and wished they could be produced by the Government, he hoped that the system, so unfortunate for the buildings themselves, which prevailed in France would never rule in this country.

The Practice Committee's Book on Dilapidations.

At the conclusion of the ordinary business before the Meeting last Monday, Mr. S. Flint Clarkson [*F.*], on behalf of the Practice Standing Committee, gave some account of the book on Dilapidations, the preparation of which has engaged the Committee during the past two sessions, and which is now completed and passing through the press. At the outset of his remarks Mr. Clarkson quoted from the Committee's Report to the Council on the completion of their task last June. The following is the text of the Report referred to:—

"The Practice Standing Committee of the Institute having, with the approval of the Council, undertaken the consideration of the subject of Dilapidations, decided to use as a basis the original pamphlet issued by the Institute in 1844 and reprinted in 1869 when the first edition was exhausted, and has, as the result of the labour of two years, completed a thoroughly modern book, divided into chapters under definite headings with new lists of references, and many other changes in form and substance.

"The Committee has also obtained copies of 'Reports on the Condition of the Premises' and similar documents from France and other countries, and submits a model for use by British architects (see Chap. III.). The necessity for this is clearly set out on pp. 11 and 12 of the original pamphlet in the following words:—'As a preliminary to the execution of leases in general the premises to be leased should be surveyed both on the part of the lessor and the lessee, and a schedule should be drawn up and signed by them or their agents specifying the actual state of every part of the buildings, by reference to which the dilapidations should be assessed at the end of the term. Such a document universally accompanies agreements for the occupation of houses in France, under the name of "Etat des Lieux," and its adoption is strongly recommended by the Council for the consideration of the profession at large as a means of simplifying a question usually attended with much complexity and seldom satisfactorily determined.'

"The Committee, in addition to presenting examples of repairing and surrendering covenants usually employed, has given improved forms for such covenants in new leases (see Chap. II.). The Committee wishes to express its cordial thanks to those who have given valuable assistance, including the Institute solicitors. It is hoped that these covenants will soon come into general use.

"The Committee has also dealt more in detail with the subject of landlords' and other fixtures (see Chaps. VIII. and IX.). A Schedule of Fixtures is important and too often omitted from leases. With such a schedule and a 'Report on the Condition of the Premises' it should always be possible at the end of the lease to judge fairly of the state of the premises and fixtures at the commencement of the term, and to make a fair assessment of the dilapidations.

"The Committee has further added a chapter on Notices to Repair, and suggested forms to be served upon the lessee in accordance with the provisions of the Conveyancing Acts of 1881 and 1890 (see Chap. X.). Notes are given as to the usual charges of architects engaged in this class of work (see Chap. XI.). A short reference to the Acts of Parliament which affect the assessment of Dilapidations has also been added, and a list of leading cases decided in the High Court giving the principle involved (see Chap. XII.).

"The chapter on Ecclesiastical Dilapidations is a special Report on this subject prepared for the Practice Standing Committee by the Ecclesiastical Surveyors' Association, to whom the Committee wishes to express its thanks.

"It will, in the opinion of the Committee, be necessary from time to time to revise this book.

"The Committee hopes that members of the Institute will follow the procedure indicated, and use the forms set out, and will, as far as they can, influence others so as to secure the general adoption of satisfactory repairing and surrendering covenants, and a practice as to the assessment of dilapidations which shall be fair and just to both landlord and tenant."

Mr. Flint Clarkson, in the course of his statement reported below, asked for the publication of the following *précis* of the contents of the volume, which was drawn up by the Committee so as to show at a glance the scope of their work:—

Chapter I. PREFACE.—Committee appointed in 1842 by R.I.B.A.—Publication in 1844 of Committee's Report—Order of present Publication—Best Current Practice—Revision from time to time desirable.

Chapter II. REPAIRING AND SURRENDERING COVENANTS.—Covenants in Leases—Dilapidations—Typical Forms of Repairing and Surrendering Covenants—R.I.B.A. Council on Covenants in 1844—Mitigating Effect of Legal Decisions—Proposed Forms of Repairing and Surrendering Covenants.

Chapter III. REPORT ON THE CONDITION OF THE PREMISES.—Reports as Schedules to Leases—What Report should state—Notes as to existing custom abroad with reference to Records of the Condition of the Premises ("État des Lieux"): France; Belgium—"Procès Verbal de l'État des Lieux": Vienna; Cologne; Berlin; Canada.

Chapter IV. LIABILITY OF LESSEE UNDER A LEASE FOR YEARS.—Definition of Dilapidations—Burden of Repairs on Tenant—Possible Liabilities of Lessee: Bricklayer; Mason; Tiler; Slater; Carpenter; Joiner; Ironmonger; Smith; Plumber; Coppersmith and Zinc Worker; Plasterer; Paperhanger; Painter; Glazier—Altered and Missing Parts of Buildings—Special Covenants—Practice in Scotland, Ireland, the Colonies, etc.

Chapter V. YEARLY AND OTHER TENANCIES.—Liability of Yearly Tenant; Tenant for Life.

Chapter VI. FARM BUILDINGS AND FARMS.—Special Customs—Custom as to finding materials—Payment by outgoing Tenant for Dilapidations—Customs as to Cultivation, etc.

Chapter VII. ECCLESIASTICAL DILAPIDATIONS.—Principle of Law: *Wise* v. *Metcalfe*, *Martin* v. *Roe*—Liabilities of Rectors—Ecclesiastical Dilapidations Act 1871—Official Surveyors—Exemption for five years—Appeals—Other Provisions.

Chapter VIII. STRUCTURES APPURTENANT TO PREMISES. FIXTURES.—Appurtenant Structures—Fixtures—General Rules—Three Lists of Fixtures—Remarks on Chapter IX.—Mortgagor and Mortgagee.

Chapter IX. FIXTURES (*continued*).—Schedules of Appurtenant Structures and Fixtures: 1. List of Fixtures held not removable; 2. List of Trade Fixtures held removable; 3. List of Fixtures held removable (not being Trade Fixtures) if put up by Lessee.

Chapter X. NOTICES TO REPAIR. MONEY PAYMENTS.—Form of Notice to Repair—Form of Notice upheld by Court of Appeal—Costs of Solicitor and Surveyor—Money Payments.

Chapter XI. PROFESSIONAL CHARGES.—Charges by percentage; by Time; under Ecclesiastical Dilapidations Act 1871.

Chapter XII. ACTS OF PARLIAMENT. LEADING CASES. BOOKS OF REFERENCE.

Mr. FLINT CLARKSON stated that the pamphlet already in existence had, to a great extent from the passage of time, got out of date, and it seemed desirable that this pamphlet should be edited first of all, then expanded and put into a modern form, with a large quantity of new information. The Practice Committee worked steadily at the matter, meeting periodically and sometimes more frequently than ordinarily, and had got through a very large amount of work during the last two years. In bringing the work up to date an important matter to be insisted upon was the Report on the condition of the premises. It had often been a weakness with leases that the condition of the premises when leased was left to the evidence of people who knew them at the time. The Committee had come to the same conclusion that the Council arrived at in 1844—namely, that the condition of the premises should not be left to evidence, but that it should be put in a written record. The Committee had obtained from correspondents abroad a quantity of information with reference to the custom prevailing in France, Belgium, Vienna, Cologne, Berlin, and Canada as regards the Report on the condition of the premises at the time of the lease being entered into. The Committee also turned their attention to the fossil forms of repairing and surrendering covenants in general use. These traditional forms were used without special adaptation to the nature of the property or the circumstances under which it was leased. It seemed desirable to make a change, and to introduce forms of covenants that could be adapted to modern requirements, and be capable of modification under special circumstances. Accordingly typical forms of repairing and surrendering covenants had been set out in the book, and these were followed by new forms—forms recommended by the Committee, which if adopted would lead to a better practice amongst solicitors and those responsible for drawing up leases in the future. These covenants, and indeed the whole of the book, had been subjected to a great deal of criticism, the work having been submitted to the Surveyors' Institution, and also to the Institute solicitor. The Surveyors' Institution, without committing themselves to a formal approval of everything, had assisted the Committee a great deal, and the solicitor to the Institute had gone into the matter very elaborately. The Committee had endeavoured as far as possible to meet all the suggestions that had been made. Another matter they had devoted attention to was the subject of landlords' and tenants' fixtures; the provision of a schedule of fixtures to all leases was insisted on, and a large amount of work had been done in order to tabulate in a convenient form for reference all the cases reported in the law books. Mr. Sidney Perks had been more than indefatigable: he had devoted an immense amount of time to this part of the book, and had produced a monumental list—indeed, three monumental lists. Then, in order to make the subject complete from their point of view as members of the Institute, the charges of architects had been inserted, also lists of books of reference and Acts of Parliament dealing with the subject generally. The leading cases bearing upon the subject had also been briefly summarised in the book, so that they might be easily referred to where some special point was in question, and a system of elaborate reference had been devised to enable anybody to get the identical leading case in any particular department of the subject. As regards ecclesiastical dilapidations, the Ecclesiastical Surveyors' Association had been taken into their confidence and had entered with considerable enthusiasm into the work. They had supplied a most admirable chapter (Chapter VII.) on ecclesiastical dilapidations, the whole subject having been dealt with from the point of view that experienced ecclesiastical surveyors should take, not simply dealing with the general principle, but dealing also with the practice and the history of this special branch of the subject. Before concluding, he wished to say a word upon the original intention of the Committee. They were of opinion that it should not be possible for the world at large to consider that any subject connected with buildings should be outside the consideration of the Institute; that the Institute should keep itself well in touch, not only with questions involving art and creative work, but also with subjects that dealt with the maintenance of buildings. It was not a matter outside the work of an architect to see that property interests in the maintenance of buildings were kept up to the standard laid down by legal documents. The new book was therefore something like a manifesto, so to speak. It was an assertion of the Institute's view with respect to this matter. It was something more than merely a re-editing of a pamphlet; it was a reaffirmation of the status and position which the compilers of the original pamphlet had taken up, and which the Council of those days had endorsed—namely, that architects were the people above all others who should deal with such a subject as dilapidations.

Mr. J. Douglass Mathews [*F.*] said that when the old pamphlet was published in 1844 matters connected with dilapidations were confined almost entirely to what were then called architects and surveyors. Since that time the work had to a great extent gone out of their hands, and been handed over to house agents who were also surveyors. There were some solicitors and surveyors who felt that their business was to get their full pound of flesh out of the unfortunate lessee. The clauses of the lease were most critically examined, and in many cases they were rendered far more oppressive than was the intention of the draughtsman when the leases were prepared. Questions were arising day after day as to the construction of the repairing covenants in leases and their effect upon dilapidations. The result was seen in the disinclination that existed at the present time to take leases. Formerly it was a very ordinary thing to take a dwelling house on lease; now it was most unusual, except with very large houses. Consequently domestic buildings were by no means good securities, because a house taken for three years, or five years and vacated, caused the owner a large sum to put it in repair, and possibly he would have the house on his hands for six or twelve months. It seemed desirable to the Practice Committee that the practice of dealing with dilapidations should be put in such a form that both lessees and lessors should understand their proper positions, and therefore the Committee urged the desirability of there being added to the lease a schedule showing the state of the house when the lessee took it. By the attachment of such a description in the lease direct information would be obtained as to the state and condition of the premises when the tenant took them, and it would then be easier to assess the dilapidations caused by the tenant during his tenancy. That was one of the most important features of the book. Those of them who had adopted a plan of that kind had found it to be greatly to their advantage in settlement of dilapidations between landlord and tenant.

Some held that when a lease had expired the premises must be put into a perfect state of repair for another tenant. Unless such a covenant was specially entered into that was not the case, as there were very few buildings put into a thorough state of repair for the amount of money that was usually obtained as compensation for dilapidations. The book was intended to act as a help and guide to architects and surveyors, and the Committee felt that, this being the case, if it had the *imprimatur* of the Institute it would do something to lead to an alteration in existing leases, which they considered would be very beneficial. He thought it only right to add that Mr. Clarkson had given but a very faint idea of the amount of time that had been devoted to the preparation of the book. By far the greater part of the work had been done by the gentlemen who formed the sub-committee—viz. Mr. Clarkson, Mr. Perks, and Mr. Brodie (*Hon. Sec.*). They had given an immense amount of time to its compilation; their reports from time to time had been criticised by the members of the Committee, and their work had been gone through by the solicitor to the Institute, so it was hoped that the book now completed would be a valuable one. The Practice Committee had passed a vote of thanks to the members of the sub-committee, and they deserved the hearty thanks of every member of the Institute. He hoped their labours would not be forgotten.

Mr. C. H. Brodie [*A.*], *Hon. Secretary of the Practice Committee*, said he should like to emphasise a remark made by Mr. Clarkson, viz. that this book, which had caused the Practice Committee a considerable amount of labour, was produced within two years. That, he thought, should be scored to the credit of the committee. The charge was often brought against their committees that they took so long to get through a task. When the book was issued, if members would bear in mind that the Practice Committee produced it inside of two working sessions of the Institute, he thought they would be as pleased as were the members of the Committee themselves.

Mr. W. D. Caröe, M.A., F.S.A. [*F.*], said he should like to ask Mr. Clarkson a question with regard to the chapter on Ecclesiastical Dilapidations with which he personally was specially concerned. Would he kindly inform them who was the President of the Ecclesiastical Surveyors' Association at the time the work was produced and who had a special hand in its production?

Mr. Clarkson: Mr. Lacy Ridge.

Mr. W. D. Caröe: I am quite satisfied, sir.

Mr. E. W. Hudson [*A.*] said that as an Associate he should like to say how much he appreciated the work that had been described to them by Mr .Clarkson and Mr. Douglass Mathews. Of course the proof of the pudding would be in the eating. Members had not seen the work yet; but if it bore out what was promised the Institute would be greatly indebted to the Committee. The work seemed to be a practical answer to those who twitted them with being both architects and surveyors; it showed them that they did not confine themselves entirely to the work of artists, but still kept their hold upon the artist's work produced in brick and stone. That should be driven home to all owners of property. There was great need of a schedule showing the condition of the building at the time the lease was taken. Those who had experience of dilapidations knew how difficult it was to get evidence of the state of the building when the lease was entered into. If it became the general practice to attach such a schedule to leases it would be a matter of great satisfaction to the public. Members were greatly indebted to the Practice Committee. In producing this book the sub-committee seemed to have done Titanic work, which redounded considerably to the credit of the Institute.

The Chairman (Mr. John Slater, *Vice-President*) said he was sure they had all listened with great interest to what had been told them by Mr. Clarkson and Mr. Douglass Mathews. He (the Chairman) had a great deal more to do with the landlords' side of the question than with the tenants' and lessees', but he always had great sympathy with the lessees in their obligations. There could be no doubt that in many cases the lessees were very hardly dealt with if the clauses which governed dilapidations in the old form of leases were strictly complied with. He was bound to say that on the estate of which he had the management they were exceedingly liberal to lessees. It often happened when buildings had to be pulled down that they were found to have been so badly used that they were obliged to assess the outgoing lessee in dilapidations. But when a house was going to be pulled down, their practice, after deducting solicitors' and surveyors' charges, was to hand over the balance received from dilapidations to the new tenant towards his rebuilding. That seemed to be an exceedingly liberal way of dealing with the matter, and one that might be more generally adopted. With regard to the conditions which obtained in old leases, he himself had had experience of their absurd nature. He took the lease of a house some years ago and found that one of the conditions was that he should allow the free passage of sewage and water through his grounds. He pointed out that although at the time the lease was originally granted this might have been correct, the main sewer had been made, and every separate building drained into the sewer. He was told that this was a sub-lease, as it were, and the old conditions must be strictly subscribed to! As Mr. Clarkson quite justly said, the new conditions in taking leases ought to be taken into account in any new lease. They were all agreed as to the necessity of the Institute taking cognisance of all matters connected with architecture and building, not only on the art side, but also on this question of dilapidations, in which architects were undoubtedly the persons who had the most interest; and they ought to see that they had cognisance of the conditions which had to be laid down. The Council had decided that this work was to be issued as an Institute book. The Practice Committee, with the modesty which distinguished them, wished that their names should not appear. The Council, however, felt that this was not fair to the Practice Committee, and they proposed to state on the title-page that it was a "Handbook prepared by the Practice Standing Committee of the Royal Institute of British Architects, and issued by the authority of the Council." He should like before sitting down to move from the Chair the very hearty vote of thanks of the Institute to the Practice Committee, and particularly to the Sub-Committee—Mr. Flint Clarkson, Mr. Perks, and Mr. Brodie (Hon. Sec.)—for their labours in preparing this book. He had taken the opportunity to look through the book, and he was quite sure that when they came to read it they would find that the matter had been put on a new footing, and that they would receive the greatest possible help from the book in dealing with this vexed question of dilapidations.

Mr. T. E. Collcutt [*Vice-President*] seconded the vote of thanks, which was carried by acclamation, and briefly responded to on behalf of the Committee by their Chairman, Mr. Douglass Mathews.

Sir William Emerson.

Past and present members of Council signalised the distinction conferred by the King upon Sir Wm. Emerson as President of the R.I.B.A. by giving a dinner in his honour at the Café Royal, Regent Street, on the 2nd inst. The function was attended by some forty guests.

The Architectural Association.

At the Meeting of the Architectural Association held in the rooms of the Institute last week formal ratification was given to the A.A. Committee's resolution accepting the conditions under which the premises of the Royal Architectural Museum in Tufton Street, Westminster, are to be transferred to the Architectural Association. Details of the scheme are given in Mr. R. S. Balfour's communication printed in the last number of the Journal [pp. 38–40].

The President, Mr. H. T. Hare [*F.*], stated that the proposal and the conditions had been very carefully considered by the Committee of the Association in all its bearings, with the result that they were unanimously prepared to accept the gift with gratitude. The Committee took into consideration the following points:—(1) The position of the Royal Architectural Museum and its accessibility; (2) The adequacy of the premises to requirements; (3) The leases; (4) The alterations required and their expense; (5) The terms of the transfer. With regard to the first, the Committee concluded that any disadvantage there might be in position was more than counterbalanced by the fact that the building was universally known throughout the profession and also one which had an extremely interesting past history. There were also the facts that the Museum was in close proximity to the Church House, Westminster Abbey, the Houses of Parliament and other notable buildings, and that the entire district was rapidly improving in all respects. Westminster, too, was fast becoming the home of all kindred societies. As to the second point, that of the adequacy or adaptability to the requirements of the Association, there could be no question that there was ample room for all the classes. The only point on which they were in some doubt was as to whether they could arrange to hold the meetings there or whether it would still be necessary to have them at 9, Conduit Street or elsewhere. They were hopeful, however, that a meeting-room might be arranged on the premises. The Westminster School of Art had for some years been carried on in the studios, so that they were well adapted for the purposes for which the Association require them. In addition to the central hall where the casts were, and office accommodation, there were eight large studios, each of which was as large as the three the Association had in Great Marlborough Street. The third point as to the leases, or, rather, the lease, which would expire in 1926. That gave about twenty-four years, and the Committee considered that this period was long enough to warrant them in taking the risk of being able to secure a renewal at the end of the term. The fact that the other lease was for a much longer period should prove of some assistance, but in any case it was proposed to approach the Ecclesiastical Commissioners at an early date in order to ascertain what arrangements could be made for extension. The fourth point was as to the alterations and their probable cost. This question the Committee had been unable at present to go into exhaustively, but a Sub-Committee had been appointed to consider the matter and prepare a report with suggestions. It was evident, however, that the sum which had been collected and promised towards the Premises Fund would not be more than sufficient to carry out all that they would want. The subscriptions having been given on the assumption that a new building was to be erected, it would be necessary to obtain the sanction of the donors for the fund to be applied to the alterations, but there was no reason to anticipate any difficulty on that score. As to the terms of the transfer, there did not appear to be anything to which exception could be taken on any ground. The opening of the Museum to the public could, it seemed to him, only result in benefit to the Association, as it would tend to make it more widely known and appreciated. The Association undertook no responsibility which the present Council of the Museum had not borne since its institution, and the possession of the collection of casts would be of the greatest value in the educational work of the Association. It seemed to him, personally, as it did to the Committee without exception, that the gift of these premises was the most fortunate circumstance which had occurred to the Association during the course of its long history, and he trusted it would prove to be the starting-point for a widely extended sphere of increased usefulness.

Professor Flinders Petrie's Work in Egypt.

At the annual meeting of the Egypt Exploration Fund, Professor Flinders Petrie briefly reviewed the results of recent exploration, and gave a forecast of next year's work. His remarks were as follows:—

I need hardly trouble you with any details of the work of last year, as the volume *Abydos I.* has been in your hands since July. The Fund has always issued its results more quickly than those of any other work, and for the last three years the publications have been given to you as soon as the collections reach England. The work of building up the early history of the dynasties has continuously gone forward, and few perhaps realise that what is now quoted as a matter of course in the order of the kings was entirely brought to light only two years ago in royal tombs. When that was published the envious remarked that we should doubtless have to change our minds because the results were so quickly laid down. But scarcely a single conclusion has been modified in the two succeeding years which have built up so much more. And the only argumentative objections that have been raised entirely fall to the ground when accurately studied.

The main result of last winter's work was the reading page by page the successive levels of the early town of Abydos; identifying the earlier levels of it with the last four stages of the prehistoric sequence dates, and the later levels with the reigns of the earliest kings. Thus an exact continuity has been determined between the end of the prehistoric age of unwritten record and the beginning of the 7,000 years of written record of Egyptian history. This is entirely the result of archæology; not a word or a sign of writing helped this discovery; and a scholar who only understood the written record would have seen nothing in the site but a meaningless cartload of flints and broken potsherds, as meaningless to him as a papyrus roll is to an Arab digger. Our knowledge of the past has gone through four stages—the gold-hunting, the art-hunting, the inscription-hunting, and now the archæology-hunting. Each stage has been despised as foolishness by those who preceded it, and each in its turn has shown that there is a wider interest and a greater importance in the remains of past civilisations. In the coming year we look forward to a very definite course of work. There is the great site of the oldest temple of Abydos, on which we have only yet cleared down to the eighteenth dynasty level. The two or three yards of accumulations which lie below that must consist of the older remains of the temples which were rebuilt by the earlier kings. Re-used blocks of the sixth, eleventh and twelfth dynasties show that a series of temples have left their mark, and the temple of the first dynasty kings is the goal which we seek below all these. The site is under water-level till late in the spring, and it will be needful to do the costly work of removing all the upper layers in order to dry the soil below and to be able to work, perhaps under the water, to finish it. But the most important early site in Egypt is worth some trouble and cost, to save all we can of history which will never be known except from this ground. Another great work is that of clearing out the two immense tombs of the twelfth dynasty kings, which were found last year. One of these I have gone through, and seen two vast sarcophagi of red granite and hundreds of square yards of polished quartzite lining the passages, which show the lavish care of the work. We may hope to bring some fine objects to light from the deep mass of chips and rubbish which half fills the passages and chambers, some 600 feet long. There is also the excavation of the large fort of the Old Kingdom, within which burials of later ages have been found, but as it has never been really cleared out there is much to be done in it. And besides this, the great cemetery of Abydos has been by no means exhausted yet. Now all this work is a very large amount to cover, far beyond the scope of one person. The ideal of the Fund has hitherto been that of individual explorers, sometimes with assistance, examining a single building. This has perforce had extensions, but the unit of work has been the type. I hope that this year will see a different ideal established, that of a group of workers, each devoted to a separate ground, and all co-ordinated in methods and results by one organiser. The committee have agreed to the principle of extending the work by joining more workers together, and we go out this year a much larger party of united workers than we have ever had before. To my great regret we have lost the help of the most capable student we have had, Mr. Arthur Weigall, who has been offered a position in Egypt in which he will find future scope. We start, therefore, with entirely new helpers. Mr. Hugh Stannus has offered for this year his skill in architecture and drawing, which will help to clear the history of the Osiris temple. Mr. Currelly, Mr. Rawnsley and Mr. Ayrton are all new to the subject, and with different capacities and in various ways will, I hope, take charge of parts of the works. Miss Hansard has volunteered to stay and give us some help with artistic drawing, and Miss Eckenstein will attend to the camp work on the collections. My own business will be organising, arranging and interpreting the work, drawing and preparing for publication. On collateral work, apart from the Fund, Miss Murray and my wife will be copying a great inscribed tomb. Thus we shall be a party of nine, and hope to get through in one season what on the old rate would have taken three years. There can be no question that this is far the more economical way of working; and it is obvious that the more we can show done the better encouragement there is to subscribers at home and abroad. We start, therefore, on what will, I hope, be a new type of working for the future, and shall have a staff which will render the Fund less dependent than before on the health of any one worker. It is the duty of this Society to rescue what we can in Egypt before it is entirely wrecked by the dealer, the ignorant amateur and speculator and the commercial destroyer, none of whom leave a shred of information; and a duty which has its scope in the present generation particularly, as at the rate of wreckage there will be but little left behind for future lives to explore. Now is the time.

The late "Leader Scott" (Mrs. Baxter).

The death, which recently occurred in Florence, of the lady so well known in this country as Leader Scott should not be allowed to pass without notice in the JOURNAL. The daughter of the well-known Dorsetshire poet, the Rev. William Barnes, she had lived continuously in Italy since her marriage with Mr. S. T. Baxter some forty years ago. "She was," says a writer in the current number of the *Athenæum*, "a *persona grata* in literary and artistic Italian circles, and the Accademia delle Belle Arti some years ago elected her an honorary member of their society in recognition of her work in interpreting certain aspects of Italian art." Her most important work is her book *The Cathedral Builders: the Story of a Great Masonic Guild*, published in 1899. In this she traces the all-pervading influence of the Guild of Comacine Masons, not only upon the architecture of Italy, but also upon that of France, Germany, England, and Ireland. An interesting review of this book, from the pen of Mr. Paul Waterhouse, appeared in Vol. VI. of the JOURNAL. More recently she wrote a life of Filippo Brunelleschi for Messrs. Geo. Bell & Sons' "Great Masters in Painting and Sculpture" Series. A review of this, by Professor Beresford Pite, appears at page 16 of the current volume of the JOURNAL.

BENJAMIN WALKER [*A.*]

MINUTES. III.

At the Third General Meeting (Business) of the Session 1902-3, held Monday 1st December, 1902, at 8 P.M., Mr. John Slater, *Vice-President*, in the Chair, with 18 Fellows (including 6 members of the Council) and 14 Associates, the Minutes of the Meeting held 17th November [p. 43] were taken as read and signed as correct.

The Secretary announced the results of the November Examinations Preliminary, Intermediate, Final, and Special.

The following candidates for membership in the various classes were elected by show of hands under By-law 9, viz.:—

As Fellows (6).

WILLIAM BLACK (Cape Town, South Africa).
WILFRED JOHN HARDCASTLE.
LEONARD VINCENT HUNT [*A.* 1888].
LEONARD MARTIN.
JAMES RANSOME [*A.* 1893] (Calcutta, India).
SAMUEL BRIDGMAN RUSSELL [*A.* 1890].

As Associates (43).

GEORGE WILFRED ALLSOP [*Special Examination* 1902] (Auckland, New Zealand).
CHEVALIER WORBY BEAUMONT [*Probationer* 1895, *Student* 1899, *Qualified* 1902].
JAMES HERBERT BELFRAGE [*Probationer* 1897, *Student* 1901, *Qualified* 1902].
RALPH BERRILL [*Probationer* 1897, *Student* 1899, *Qualified* 1902].
WILLIAM BEVAN [*Special Examination* 1902] (Johannesburg).
HAROLD COURTENAY BISHOP [*Probationer* 1896, *Student* 1898, *Qualified* 1902].
EDWIN DACE BROWN [*Probationer* 1898, *Student* 1899, *Qualified* 1902].
REGINALD PERCY CHAMBERLAIN [*Probationer* 1899, *Student* 1900, *Qualified* 1902] (Leicester).
HENRY CHAPMAN [*Probationer* 1896, *Student* 1899, *Qualified* 1902].
ALFRED ROWLAND CONDER [*Probationer* 1898, *Student* 1899, *Qualified* 1902].
EDWARD FURNESS MARSON ELMS [*Probationer* 1897, *Student* 1901, *Qualified* 1902].
RICHARD FIELDING FARRAR [*Special Examination* 1902].
JOHN HAROLD GIBBONS [*Probationer* 1895, *Student* 1898, *Qualified* 1902] (Manchester).
THOMAS HARRY GIBBS [*Probationer* 1895, *Student* 1899, *Qualified* 1902].
THOMAS SEDGWICK GREGSON [*Probationer* 1895, *Student* 1897, *Qualified* 1902].
BAXTER GREIG [*Probationer* 1897, *Student* 1901, *Qualified* 1902].
PERCY JOHN GROOM [*Probationer* 1893, *Student* 1896, *Qualified* 1902].
PERCIVAL JOSEPH HAYWOOD [*Probationer* 1895, *Student* 1899, *Qualified* 1902].
WILLIAM HERBERT HOBDAY [*Probationer* 1898, *Student* 1900, *Qualified* 1902].
ORTON HOLDEN [*Probationer* 1893, *Student* 1896, *Qualified* 1902] (Kettering).
HENRY STRINGER JARDINE [*Probationer* 1895, *Student* 1897, *Qualified* 1902].
IVAN CALROW KENT [*Probationer* 1895, *Student* 1899, *Qualified* 1902] (Chelmsford).
REGINALD GUY KIRKBY [*Special Examination* 1902] (Cape Town).
HENRY LOUIS EMILE MERILLE DE COLLEVILLE [*Probationer* 1895, *Student* 1897, *Qualified* 1901] (Brighton).
WILLIAM JAMES NASH [*Probationer* 1898, *Student* 1899, *Qualified* 1902] (Bournemouth).
CHARLES FREDERICK NEWCOMBE [*Probationer* 1892, *Student* 1897, *Qualified* 1902] (Newcastle-upon-Tyne).
PERCIVAL CORNEY NEWMAN [*Probationer* 1892, *Student* 1894, *Qualified* 1902].
WILLIAM CAMPBELL OMAN [*Probationer* 1895, *Student* 1899, *Qualified* 1902] (Johannesburg, S. Africa).
EDWIN OSMAN PAYNE [*Probationer* 1898, *Student* 1900, *Qualified* 1902].
WILFRED STONEHOUSE PAYNE [*Probationer* 1898, *Student* 1900, *Qualified* 1902].
RICHARD McMINNIES ROBERTS [*Probationer* 1897, *Student* 1899, *Qualified* 1902] (Warrington).
ALEXANDER ROBERT ROBERTSON [*Probationer* 1898, *Student* 1899, *Qualified* 1902].
ERNEST SIMM [*Probationer* 1893, *Student* 1896, *Qualified* 1902] (Blackburn).
SPENCER SMITH [*Probationer* 1896, *Student* 1898, *Qualified* 1902] (Deal).
JOHN SWARBRICK [*Probationer* 1897, *Student* 1900, *Qualified* 1902] (Manchester).
CHARLES FREDERICK WARD [*Probationer* 1898, *Student* 1900, *Qualified* 1902].
LLOYD FOSTER WARD [*Probationer* 1895, *Student* 1898, *Qualified* 1902] (Birmingham).
CHRISTOPHER WILLIAM FREDERICK WHEELER [*Probationer* 1895, *Student* 1899, *Qualified* 1902].
THOMAS WILLIAM WHIPP [*Probationer* 1900, *Student* 1900, *Qualified* 1902] (Scarborough).

HENRY ARMSTRONG WILSON [*Probationer* 1896, *Student* 1898, *Qualified* 1902] (Newcastle-upon-Tyne).
ROBERT GORDON WILSON, jun. [*Probationer* 1897, *Student* 1900, *Qualified* 1902] (Aberdeen, N.B.)
DOUGLAS WOOD [*Probationer* 1898, *Student* 1899, *Qualified* 1902] (Newark-on-Trent).
WILLIE WRIGLEY [*Probationer* 1896, *Student* 1898, *Qualified* 1902] (Wakefield).

As Hon. Associate.

GEORGE MALLOWS FREEMAN, K.C., J.P.

The Secretary announced that by a resolution of the Council under By-law 20 the following gentlemen had ceased to be members of the Royal Institute:—From the class of Fellows, John Tavenor Perry, Robert Emeric Tyler, and Robert Mackay Fripp; from the class of Associates, Cecil Orr, Eustace Godfrey Bird, and Percy Oakden.

The Hon. Secretary addressed the Meeting on some important works recently purchased for the Library and laid upon the table for members' inspection.

Mr. S. Flint Clarkson [*F.*], on behalf of the Practice Standing Committee, having briefly outlined the contents of the book on Dilapidations prepared by the Committee, a discussion ensued, at the conclusion of which, on the motion of the Chairman, seconded by Mr. T. E. Collcutt, *Vice-President*, a vote of thanks was passed to the Committee, with special mention of the names of Messrs. S. Flint Clarkson [*F.*], Sydney Perks [*A.*], and C. H. Brodie [*A.*] (*Hon. Sec.*), for their labours in connection with the production of the work.

The proceedings then closed, and the Meeting separated at 9.15 P.M.

REVIEWS.

OLD ST. PAUL'S.

Old St. Paul's Cathedral. By William Benham, D.D., F.S.A., Rector of St. Edmund the King, Lombard Street. La. 8o. Lond. 1902. [*Seeley & Co., Great Russell Street, W.C.*]

The old cathedral of St. Paul, founded *c.* 1087, completed *c.* 1255, and destroyed by the Great Fire of 1666, was, according to Canon Benham, "the finest in England of its time." This is surely high praise when we recall Lincoln, Canterbury, York, Salisbury, &c. It was, however, the *largest* cathedral church; for, whether we accept the measurements of Stow, Dugdale, Wren, or Ferrey, its total length was much greater than that of Winchester, and its spire of wood was some sixty or eighty feet higher than the famous spire of Salisbury. In its historical associations it may also be said to surpass all others. Its foundation saw the beginning of the Gothic style, and its destruction was coeval with the close of the Mediæval and the establishment of the Renaissance spirit in England. "Old St. Paul's" was the central feature around which old London grew; it advanced to completion as the city increased in wealth and importance; in their destruction they were not divided; and both rose out of their ashes to resume their pre-eminence in a new age with ever-increasing influence; till now the city is the greatest in extent, population, wealth, and influence of any the world has seen, and its cathedral is not unworthy of the city it adorns.

It is a matter of congratulation that (as if with some presage of the coming doom of the city and its cathedral) Stow described the city with the minute care and accuracy of an inventory, surveyors made good plans, artists executed excellent views of it, while Wenceslaus Hollar made complete and fairly correct plans, sections, elevations, &c., of the cathedral, with details of its most important tombs, &c.

The exact reproductions of Hollar's drawings form a valuable feature in Canon Benham's book. They are more complete and accurate copies, although on a smaller scale, than those given in Ellis's edition of Dugdale's *St. Paul's*, 1818. Longman, in his *Three Cathedrals of St. Paul*, gives as by preference E. B. Ferrey's beautiful drawings of a restoration of Old St. Paul's, in which he corrects, no doubt on good evidence, the often inconsistent plans by Hollar. Canon Benham, in turn, would amend Ferrey's design of the spire, having good corroborative evidence of the accuracy of Hollar in respect to the angle turrets at its base, omitted by Mr. Ferrey. Longman has examined closely into the dimensions of the cathedral as given by Dugdale from Stow, and, following Mr. Ferrey, makes considerable variations from these authorities. Canon Benham gives the leading results in his book.

A very interesting plan shows a comparison between the size and position on the site of the old St. Paul's and Wren's new cathedral.

Having by the aid of these and other illustrations described the old church buildings, subsequent chapters of the book are devoted to "Historical Memories," "The Clergy and the Services," and "From the Accession of the Stuarts."

The author has had the advantage of some important recent works on the same subject; and the very nature of it precludes much variation in the facts or their treatment; but it is no small advantage to have these brought together in a well-ordered and handy way in this very handsome volume, creditable alike to author, publisher, artists, and bookbinder. The reader may feel assured that nothing of any consequence has been overlooked, and that he has in this monograph all that is worth knowing on the interesting church of which it treats.

Besides the illustrations from Hollar, there are many beautiful plates (some printed in colours) of initials and page illuminations from fourteenth- and fifteenth-century manuscripts. "A View of Old St. Paul's and the Three Cranes Wharf," compiled from old drawings and prints, forms a charming and appropriate frontispiece.

THOMAS ARNOLD.

CHICHESTER.

The Cathedral Church of Chichester. A Short History and Description of its Fabric, with an Account of the Diocese and See. By Hubert C. Corlette, A.R.I.B.A. With forty-five illustrations. 8o. Lond. 1902. Price 1s. 6d. [George Bell & Sons, York Street, Covent Garden.]

The volume before us is another addition to the excellent handbooks of "Bell's Cathedral Series," and deals in four chapters with the ancient city of Chichester and its noble pile of buildings. In the first chapter the history of the cathedral is set out briefly and tersely, and relates in graphic manner that so early as the eighth century Chichester was a known centre of civil, though apparently not ecclesiastical activity, and in "Walcot's Early Statutes" there is some uncertain documentary evidence, referring to Bishop Brethelm and the Brethren dwelling at Chichester in the middle of the tenth century. It appears that originally the foundation of the See was at Selsea, by Cædwalla in the seventh century, and in the south aisle of the choir there are now existing some rude sculptured panels which are supposed to have been brought from the original foundation of the cathedral at Selsea.

Mr. Corlette gives at some length the various vicissitudes of the cathedral, and in a somewhat disjointed way traces its history from the foundation in 1088 up to the present time. Numerous illustrations from photographs, old engravings, and books are reproduced in the volume, and a plan of the cathedral is also inserted, taken from the original drawing made by the late Mr. Joseph Butler, architect to the cathedral. This plan shows at a glance the dates at which the various portions of the building were erected.

An interesting account is given of the fall of the cathedral tower in the year 1860, and it is interesting to learn that Sir Gilbert Scott in rebuilding the tower reproduced the original design in its entirety, merely raising the whole body of the tower and spire some five or six feet above its original height.

The exterior of the building is dealt with in the second chapter at some length descriptively, to us in some places rather tediously so, and no attempt has been made to criticise the building from an architectural standpoint. All the important features of the exterior are minutely described, the outer wall of the choir aisle is mentioned as being one of "the most interesting portions of the building, from an archæological as well as from an architectural standpoint. It shows three rows of arched heads of the small twelfth-century windows that used to light the earlier triforium gallery." We all have, of course, our special sympathies with the various periods of English architecture, and we, personally, think there are much more interesting architectural features in the building under notice than the Norman walling to which our particular attention has been called. Gaunt, grey, and sturdy, the detached bell tower, locally known as the Campanile, has, we think, scarcely had justice done to it, a brief technical description failing to give one any idea how its sombre presence adds so materially to the general picturesque and artistic appearance of the whole block. Relying mainly on the strong vertical lines of the buttresses and the octagonal lantern for effect, it forms a feature of the *masse* of which every art lover is proud.

In Chapter III. the interior of the building is described, and also the monuments, and fine views are reproduced of the various interior vistas. In a view of the north aisle choir there is a distinctive French influence, the arcading having a central pier with detached shafts some distance away. The illustrations of the decorations by Bernardi (1519), reproduced from the vault of the Lady Chapel, are very interesting.

The diocese and See are dealt with in the fourth chapter, and reference is made to the Roman foundation of the city, which was then called Regnum. Of the numerous Roman remains found in the city no mention is made by Mr. Corlette, although frequently when excavating within the city walls it is a common occurrence to meet with Roman coins, pottery, urns, and other remains of this far-off age.

The remaining buildings in the See have, we think, been done meagre justice to in the half-page allotted to the description of them, and the unique Market Cross which is illustrated, and which is probaly the finest now extant, is merely passed over with the remark that it was built by Bishop Storey in the year 1500.

The old Queen Anne and Georgian buildings in the city are not mentioned at all, although Chichester owes much of its charm to this freely treated classic work, and still contains three buildings said to be designed by Sir Christopher Wren.

JAMES SAUNDERS.

CATHEDRALS OF GREAT BRITAIN.

An Illustrated Guide to the Cathedrals of Great Britain, their History and Architecture. By the Rev. P. H. Ditchfield, M.A., F.S.A. Illustrated by Herbert Railton, J. A. Symington, H. M. James, H. Crickmore, &c. 8o. 1902. Price 7s. 6d. [London: J. M. Dent & Co. Philadelphia: J. B. Lippincott Co.]

In a work of this kind, comprehending such a number of architectural examples of the highest order, necessitating the examination of such a mass of structural and literary material, the difficulty of the compiler is to know what to omit. In 450 pages, purporting to contain an account of thirty-three English cathedrals (and abbeys), nine Scottish and four Welsh cathedrals, as well as by-references to other objects of interest in their neighbourhood, it is obvious that in some cases only a brief and superficial account can be given. The sources drawn from are, in general, up-to-date, though some of them have latterly been called in question. In a guide-book, however, there is neither space nor occasion for controversial matter, and the personal opinions of the author are not to be too much obtruded; but if he be an antiquary, and occasionally puts them somewhat strongly in regard to *vexata quæstio* or matters of taste, it may perhaps not be too heavily laid to his charge.

The Rev. P. H. Ditchfield's sympathies are broad enough to prevent his appreciation of Gothic architecture standing in the way of a full admiration for English Renaissance art. He says, speaking of St. Paul's Cathedral, "It is the finest and grandest building in London, if not in the world." It comes first in order in the volume, twenty pages being devoted to it. He, at least, sees no incongruity in the note struck by the recent decoration there. The mosaic work, he says, "adds much to the beauty of the cathedral," and is "worthy of the highest praise."

Nor will he hear of French origin for English Gothic. He says: "There could not be a greater error; no foreign masons taught our English masons the secret of their art. They were wearied with the Romanesque uncouth details of Norman art—were feeling after and finding a more excellent way, and discovered the beauties of Gothic architecture." If anything, he thinks the French lagged behind us, and their Flamboyant style was a travesty of our Decorated work. These may be gratifying conclusions, but do not carry conviction, I believe, to many minds.

The brief story of each building is fairly well separated from the description—a difficult matter to compass; but need for brevity sometimes makes abrupt sentences, and here and there they are mixed up as to matter. The author accepts 1133 as the date of Durham nave vault, and quotes the belief that it is the only original stone Norman vaulting over a nave in England. Cardinal Langley merely altered the Galilee Chapel (p. 291), as the context states.

A revision for a new edition will allow of rectification of such slips as "General Gordon died 1890" (p. 30); "The *width* of the tower = 144 feet" (p. 422), referring to St. Albans. (It might then be added that Mr. J. O. Scott designed the choir pulpit, a gift of the Freemasons of England, though it may have been thought that it, at least, of recent fittings, was distinguishable from others by an amateur designer.) It is said (p. 417) to be the largest (cathedral) in England, but is given six feet less length than Winchester (p. 422). Only the nave is really intended. The area given exceeds that in Lord Grimthorpe's book. In the case of Lincoln it is nearly 13,000 feet less than the "*Book of Building*," or Bell's "*Itinerary*." Wyatt is pilloried throughout the book; and reckless restoration is also properly condemned. In many cases we find the author's judgment expressed on matters of taste somewhat beyond what a guide-book demands—*e.g.* "*This* adds much to the beauty," "*That* is a noble example," "good windows," "a superb structure," "the finest portico in Europe," "grandest and most magnificent in the world," &c. "*Late* Early English" is not a happy classification.

Fourteen plans are given, and it would be an advantage if they were placed opposite the descriptive text in every case. An increase in their number would be also helpful. A note that all dimensions are in the clear in the tabular lists might be added.

There are eighty illustrations, many by Mr. Herbert Railton, whose poetical pencillings are always pleasing, if only suggestive of the detail which an architect knows he ought not to, but usually does, look for.

A short glossary of terms at the end is helpful to the uninitiated.

To the traveller who will carry but one guide-book to read as he runs across our island, this will serve his turn for English examples, if not for those across the Border, to tell him something of the work of "the great unknown toilers who built so securely and so well, who first put their hearts, lives, affections, and religion into their work."

E. W. Hudson.

ALLIED SOCIETIES.

THE EDINBURGH ASSOCIATION.

Mr. Hunter Crawford's Presidential Address.

Gentlemen and Fellow Members,—Honour and duty go with the position of President of this Association. I thank you for the honour you have done me, and I shall endeavour to carry out the duties to the best of my ability, and for the advancement of architecture and the objects of this Association.

Among the first, and perhaps the most difficult part I am called upon to perform, is that of addressing you at the opening of the session. This duty is to me all the more onerous because I feel that this Association is at a turning point of its career. We are now entered on the second year of the life of this Association since its constitution was altered by amalgamation with the Edinburgh Architectural Society. During the past year we were only beginning to settle down to the new order in our new premises, and now we are about to see how the scheme will work, and whether the labours of your committees will strengthen the Association and put new energy into it.

This Association is the oldest architectural society in the country, and its early history and struggles have often been referred to from this chair, while the changes that have taken place in the last few years are fresh in your memory; but I would now draw your attention to the present position of our body, and its objects and uses, and its facilities for carrying these out.

We have 49 Fellows, 224 Members, 90 Associates, and 6 Corresponding Associates on our roll, and our objects are to "promote and afford facilities for the study of architecture, and to serve as a medium of friendly communication between the members and others interested in architecture."

I think many of our members do not realise the facilities provided to carry out these objects. There is our excellent reading-room in a very central position and supplied with the current architectural journals. We have a very good library of architectural works which may be consulted at the hours arranged by the committee. We have our lectures and discussions on architecture, decoration, and kindred subjects, and our visits to buildings old and new. Advantage can be taken of these facilities by all members. Besides these the Associate section has its own lectures and also competitions, the latter being an excellent help in their study of architecture.

Further, the days when we have visits to buildings, and the evenings when we have lectures, and the club nights of the Associate section, serve as an excellent "medium of friendly communication between the members and others interested in architecture." The Association is therefore carrying out its objects to a certain extent, if not as fully as it might. One thing is needed for further development, money. You have heard to-night our financial position, which, in view of the heavy and exceptional expenditure of the past year, is satisfactory. It is obvious that economies must be effected, and our income increased, if we are to continue the prize schemes and to resume the publication of our Transactions and Sketch-book. If the Publication and Sketch-book Committees would only meet and carefully consider ways and means, prepare clear and trustworthy estimates of cost and revenue, and submit their proposals at an early meeting, I am sure a way would be found to resume our publications. There is plenty of material, and there is plenty of interest, among our members to give properly managed publications the necessary support.

In one branch of activity our Association is wanting. We have no work classes or studio. Since the School of Applied Art was begun our work classes have been discontinued, as it was felt that, as long as that school provided good teaching under *the immediate control of architects*, anything our Association could do would be a hindrance rather than a help. We are unanimous in acknowledging the excellence of the architectural education supplied by the School of Applied Art, especially in draughtsmanship and knowledge of style, and we architects have seen the results in our own assistants; and the marked success of its students (out of all proportion to their numbers) are known to all of you. Could we rely upon this school being continued on the same lines as hitherto, with a prospect of its development to include all the teaching necessary for the full education of our students, we could wish for nothing better; but this is improbable, everything pointing to the early closing of the school or, at any rate, its removal from the direct control of architects engaged in the practice of their profession. So soon as the school loses touch with practising architects, we may look for a falling-off in results. There may be more passing of examinations, more leaving-certificates granted, more academic teaching; but the results, so far as providing the students with ability to design and knowledge to construct, will be found to be meagre in the extreme. I ask the architects of this room what weight they give to South Kensington certificates of honours in building construction when engaging an assistant.

Is it not almost invariably found that knowledge acquired to pass these examinations is of little use when the student is brought face to face with a single piece of real building construction? The knowledge has been imparted by means of text-books and diagrams, but lacks that realism and life which could only be imparted by the direct teaching, or direction, of men who are daily engaged in practical dealing with building, from the architect's standpoint. I say from the architect's standpoint because building—and included in the terms are all the building trades—is rarely a mere question of building alone; it is not simply construction for durability or stability, but constructing with the further object of obtaining an effect. The best form of dampcourse in a wall, or the concealed timbers in a roof, may be construction alone; but the face of the wall above the dampcourse, or an open timber roof, requires construction with a view to effect. Further, architects rarely design a wall or a pillar merely of sufficient strength to carry the superimposed weight; they make them of dimensions, "not only to *be* strong, but to *look* strong."

This brings us right into the subject which has lately been much discussed, "the education of the architectural student." The subject is not new. For the last twelve years, at least, it has formed the subject of almost every presidential address to the London Architectural Association.

If we consider what an architect should be, it may help us to come to a conclusion as to the best manner of educating him for the work he has to do. All that makes the ideal architect cannot be found in one man. Ruskin says:

> If an architect lays his bricks and stones well, we praise him for his manipulation; if he keeps well within his contract, we praise him for his calculation; and if he arranges his beams well so that no one drops through his floors, we praise him for his caution. But if he is to be a great architect, he must do something more than possess and exercise these qualities.

Professor Simpson, of Liverpool, in more prosaic language says:

> An architect should, in the first place, be a man of good, all-round general education, should possess a knowledge of mathematics and the elements of science and physics, and have sufficient acquaintance with French and German at least to enable him to travel with profit and with pleasure, and to read and learn from the many books on architecture published in these languages. He should also be a man of wide sympathies, taking a keen interest in other arts besides his own, especially in painting and in sculpture. An eye for colour is, in fact, essential to an architect. . . . Lastly, but it is by no means the least important necessity, the architect must possess imagination to conceive and an educated taste to correct his conceptions.
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> The above may be termed general qualifications.
>
> His special ones must include a thorough knowledge of the materials to be used and the work to be done in the different trades. . . . He should be a master-builder in all; able to guide and direct the workmen under him, and should understand, not only the practical, but also the æsthetic use of all materials . . . in one word, the art of building.

But even Professor Simpson has omitted a great deal from the equipment of the modern architect. As a man, he should be of high honour, strict and just; he should have a general knowledge of all styles; a good knowledge of all applicable to the present day, and as intimate a knowledge of at least one style as he can possibly attain to; of business capacity to carry contracts to a successful conclusion, tactful and of untiring industry. Surely such complex qualities require every aid that education can give, and yet nine-tenths of architects have only had an ordinary school education, some drawing lessons, and what they can pick up in the offices in which they are engaged, supplemented by their own private studies.

Book learning is only an infinitesimal part of the education of an architect. It is absolutely essential, geniuses excepted, that the education should be given, or *at the least directly controlled, by architects in the active practice of their profession.* Mr. Hare recently quoted Professor Dewar's brilliant address to the British Association where he said, "There are plenty of chemists turned out now by the Universities, but they are of no use for practical purposes. They are chokeful of formulæ. They can recite theories, and they know text-books by heart. But put them to solve a new problem freshly arisen in the laboratory, and it will be found that their learning is all dead. It has not become a vital part of their equipment, and they are 'floored' by the first emergence of the unexpected." All this is to show that chemists, medical men, and architects can only be taught efficiently by those who are daily solving the problems the students will be called upon to solve at a later date.

A medical student will learn something from a text-book description of how to perform an operation, he will learn more from an exposition of how to do it by a practising surgeon, more still if he sees the operation performed, and most of all by doing it himself. And so with an architect. Reading will do the student good; instruction by a practising architect will be better; assisting the architect in his work is better still; while he will find that nothing will teach him more than the actual carrying out of work himself.

I do not wish to labour the point, but the foundation of any scheme of architectural education must be that the direction and control shall be in the hands of architects.

Mr. Baggallay said:

> Architectural education has been the subject of much that has been said and written in recent years, and considering the many-sided character of an architect's work, and that it is quite impossible for any mere man to have all the skill and knowledge which a theoretically perfect architect should have, it is not very surprising that there are almost as many opinions as there are writers and speakers. Some hold that pupilage is all-sufficient; some that it ought to be done away with; some put their faith in sketching and measuring up what our forefathers built; others say that a modern workshop is the proper school for us; some would have the German school system; others the French atelier system; and there are plausible, indeed very sound and good arguments which can be and have been urged in favour of each of these theories in turn. . . . The fact that apprenticeship has an immensely strong hold upon the profession, and that, notwithstanding its many abuses, it is, on the whole, a good system, with many advantages, makes all talk of superseding it useless for the present, even if it were possible to prove that what we would substitute would be less open to objection.

We have, therefore, so long as apprenticeship s general, to bear in mind that the education of the architectural student must be almost wholly in the mornings and evenings, only a small percentage being able to take day classes. In this connection, and to show what is being done elsewhere, I would refer you to the London Architectural Association *Brown-book* for this year.

It is evident from that report that the London Association is a live and vigorous body, doing all it possibly can for the education of its members; and although its membership is about ten times as great as our professional membership, still we should like to see greater life and vitality among our members; and this can only be done by each one taking an active part in our work, from the junior apprentice to the senior architect.

We know that some architects of great ability have held aloof from the Royal Institute because they could not see eye to eye with it, and some Edinburgh architects hold aloof from our Association because they do not see the good it is doing. Let them rather throw themselves with heart into the work of education; let them exercise some self-denial and self-sacrifice, and assist in putting our Association in a position to found a school, however humble it may be in its beginnings, to take the place of the School of Applied Art, should it be closed, so far as that school is educating architectural students, and supplement the teaching given there by instruction in the other sides of our work given under the direction of architects.

Mr. Henry T. Hare, well known to you as an able and busy architect, occupying a high position in our profession, President of the London Architectural Association, has yet found time to enrol himself as a student in the modelling class of his Association, and we would like to see some such enthusiasm displayed towards this Association by our brother architects in Edinburgh.

The profession is not a highly remunerative one, and the practical impossibility of architects endowing their own teaching is not realised by the general public. If it were, I am sure many of our wealthy men who realise the importance of architecture as a permanent and the most important evidence of our civilisation—who realise its importance in meeting the æsthetic and practical daily needs of the country—would come forward with an endowment sufficient at any rate to place a school on a permanent basis, so that its annual income would not be subject to a change in municipal policy, and where an annual income would not require as much energy for its acquisition as is devoted to the whole of the conduct and teaching of the school.

At the last ordinary meeting of this Association a committee was appointed to report on this subject of education. I do not wish to trespass upon their report further than to say that in my experience of this country I have not seen great results from the professional or university teaching of architecture, while everything has pointed to the good that is done by teaching it in a school where practically the whole of the teaching is given by architects still in active practice. I have endeavoured to emphasise this point throughout the whole of my address to-night, more especially as in any reports I have seen regarding proposed changes in the art education in Edinburgh I have seen no one take up a strong position on this matter, which I believe to be the most important in the whole question of the teaching of architects. It is the principle which was adopted at the inauguration of the School of Applied Art, and it is the principle which dominates the greater part of the teaching given by the London Architectural Association.

There is an ever-increasing sum spent on the technical teaching of this country, but far too little upon the teaching of architects, who have the directing and control of the enormous number of men and the great sums of money employed in the building industries of this country. I appeal, therefore, to our municipality to take a greater interest in the education of our architectural students; to the men of wealth and with a knowledge of architecture to divert some of their benefactions to this important branch of technical education; while I appeal more strongly than all to architects themselves to join with us in an endeavour to improve and put a permanent basis to the architectural education of this city.

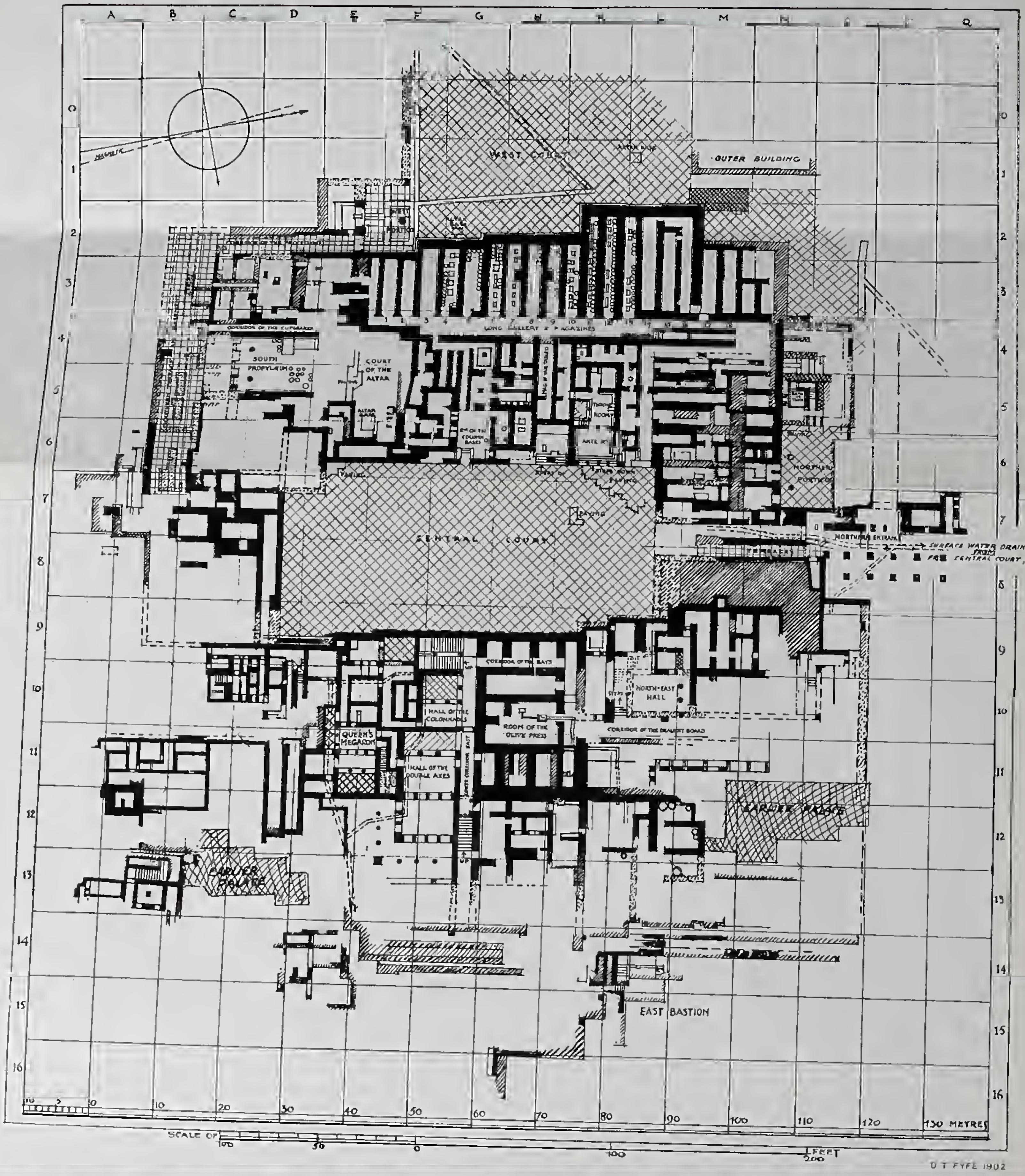
THE LIVERPOOL SOCIETY.

The Liverpool Architectural Society (Incorporated) divide their meetings into two classes—Ordinary and Members'. The members' evenings are more informal. The President, although occasionally present, does not preside; smoking is general. The Paper is provided by one of the junior members of the Society, and many of those who take part in the discussion on these occasions are diffident about catching the President's eye at the ordinary meetings.

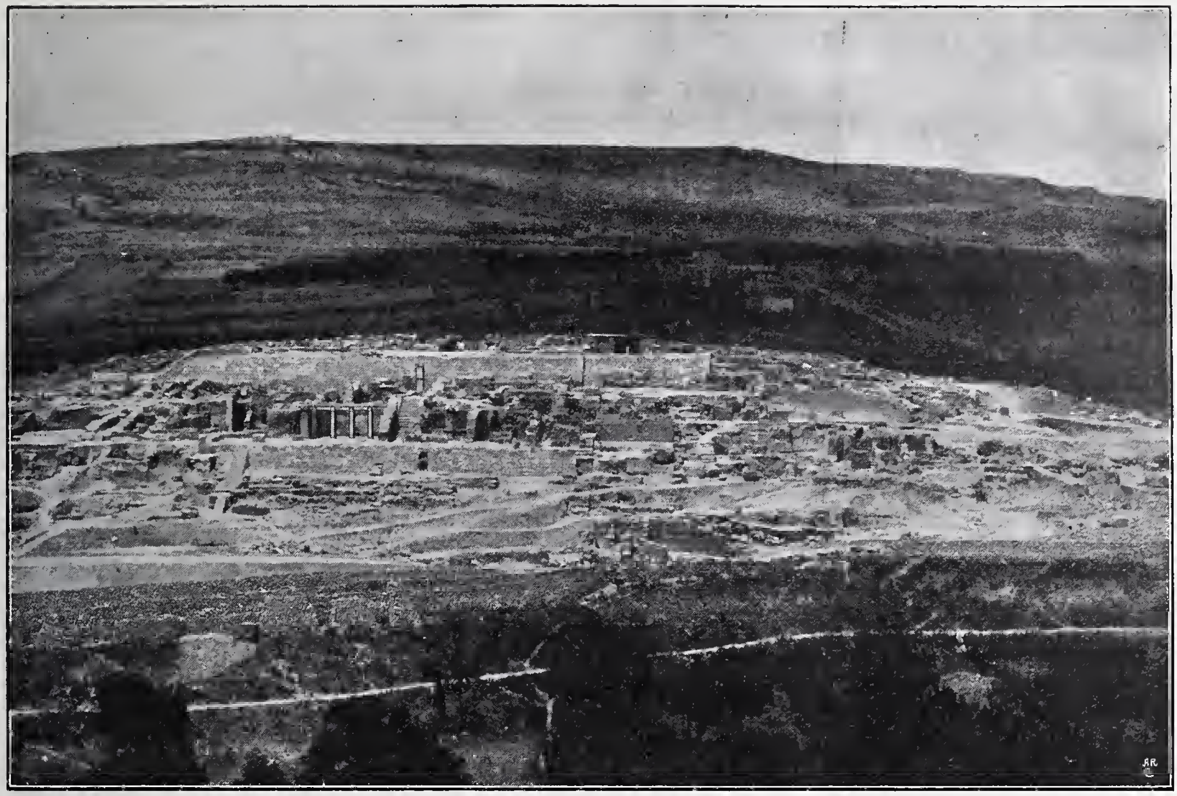
At the members' evening held on Monday, 17th November, Mr. H. L. Beckwith presided over an attendance of 43. The Paper was read by Mr. Otis D. Black on a "Holiday in Normandy," illustrated by lantern slides. The reader proved to be an amateur of French Gothic, and an enthusiast about Flamboyant work. The different character of the carving and figures in the porches at Chartres was well brought out in the lantern illustrations. Part of the Paper was devoted to half-timber work in Dreux and Evreux.

Hastwell Grayson, *Hon. Sec.*

THE PALACE OF KNOSSOS.



SKETCH PLAN OF THE PALACE OF KNOSSOS.



Ruins of the Palace of Knossos, Crete: General View of the Remains on the East Slope.

A BIRD'S-EYE VIEW OF THE MINÔAN PALACE OF KNOSSOS, CRETE.

By Arthur J. Evans, LL.D., F.R.S., F.S.A.

Read before the Royal Institute of British Architects, Monday, 15th December 1902.

AFTER three campaigns of excavation, begun in 1900, it is now possible—though the work cannot be said as yet to have attained completion—to speak with some confidence of the main lines as to the great prehistoric Palace that it has been my lot to bring to light on the site of Knossos. The magnitude of the work can be judged from the fact that between four and five acres of the building have now been uncovered, and in some parts the area has been practically doubled so far as architectural results are concerned by the recovery of extensive remains of upper stories. I had previously acquired—though not without encountering years of opposition from the native owners—the site on which the remains are situate, but the work of excavation, and it must also be added of conservation, on so vast a scale has been beyond the limits of individual resources. Great assistance has been given to me through the Cretan Exploration Fund, and I gladly seize the occasion of heartily thanking the Institute for its liberal contribution; but the annual amount to be covered, over and above the assistance given, has still been necessarily large. In carrying out the work I have been specially fortunate in securing the services of Dr. Duncan Mackenzie, who had acquired most useful experience in the excavations undertaken by the British School at Athens in Melos, and of Mr. Theodore Fyfe, formerly Architect to the School, as to the excellence of whose architectural plans and drawings the Institute has now an opportunity of judging.

Of the Palace itself and its place in the history of architecture and art it is impossible here to give more than a summary account. In outline, as will be seen from the plan, it very nearly approaches a square form with an oblong central court, and apparently four main entrances, roughly answering to the points of the compass. To the west are the remains of a paved court, with altar bases and raised causeways. Along the base of the Palace wall there is a raised plinth, which seems also to have been used as a seat, and there is every indication that this was the principal gathering place of the people—the Agora—where king and citizens would most naturally have met. Here certainly was the state entrance, a lofty porch, flanked by fresco paintings in which bulls formed a principal feature, giving access to two imposing entrances. One of these opened into a magnificent corridor, the other to a chamber at whose portal we may well believe the king sat in judgment before the assembled people in the Agora beyond.

The entrance corridor contained remains of a great processional fresco—men in long robes, priests or princes: youths carrying vases, apparently tribute-bearers: the lower borders of the robes of a brilliantly-apparelled lady, perhaps a queen. Evidence was forthcoming of the continuation of this "Corridor of the Procession" along the upper terrace of the southern face of the Palace, doubtless in this section opening on a kind of verandah. By this means a covered line of passage was secured between the state entrance on the west and the eastern quarter of the Palace, passing the southern entrance, and looking out on the south end of the central court. To the section of this corridor flanking the central court seem to have belonged a series of painted bas-reliefs, found in the basement below, which in some respects may be regarded as the continuation in an ascending scale of the processional frescoes nearer the western entrance. Two remarkable fragments found here show a part of a head with a fleur-de-lis crown, and a male torso, naturalistically moulded, wearing a fleur-de-lis collar.

The more immediate objective of the entrance corridor from the west is to be found, however, in the remains of a Propylæum overlooking the southern terrace. This Propylæum was originally entered by three doorways, giving access to a kind of fore-hall containing two column bases. Traces of the original decoration of the façade of this occurred in the shape of finely relieved and undercut rosettes, executed in a porphyry-like limestone, and forming part of a kind of frieze or cornice, which seems to have run round the portals. Of the internal decoration of the Propylæum very interesting relics occurred, not only in the shape of painted stucco rosettes in the flat which carry on the motives in relief of the exterior stone-work, but in the remains of a fresco exhibiting a male figure, painted life-size, which had fallen backwards into a neighbouring passage. This design, representing a cup-bearer, shows that the same system of processional figures that characterises the walls of the entrance corridor from the west was continued on those of the columnar hall. The elegant pose of the youth bending back to support the weight of the tall pointed silver vase that he bears with both hands, the brilliantly decorated belt and embroidered loin-clothing, but above all his finely-cut features, of a dark south European type not yet extinct in Crete, combine to stamp this as the finest example of figure painting that has survived from prehistoric Greece.

This southern Propylæum gives access to a small court with an altar-base, beyond which, in the present state of the remains, is visible a somewhat complicated block of small rooms. Many of them seem to have served as the offices of palace functionaries, and contained deposits of their clay archives, accounts, inventories, and other documents in a highly-developed system of writing, about a thousand years earlier than the first written records of historic Greece. Other small chambers were used as stores for fine stone vases, or as cellars containing vats and tall jars, once filled with oil or wine. This block of ground floor or basement rooms flanked the west side of the central court, the floor level being four steps down from it. On its inner or western side the block was flanked by a fine paved corridor, upon which opened a succession of eighteen magazines, many of them with rows of huge oil jars—large enough to have accommodated the forty thieves!—still ranged in order against their walls. A remarkable feature of these magazines was that beneath the paved floor on which rested the jars were double tiers of stone chests, lined with lead, which may, in part at least, have been constructed with a view to securing treasure.

But it was not certainly with a view either to the basement offices or the magazines, that the stately line of approach marked by the south Propylæum was designed by the Minôan architect. The existing remains of upper blocks show that the whole of the region in question was originally surmounted by a more important upper story. More than this, the distribution of these upper blocks as well as the inner lines of the lower walls and supporting pillars in the central part of this area show that an important hall ran down it, the general outline of which can, to a great extent, be recovered. It almost exactly corresponds in arrangement with the great Megaron of the contemporary Palace excavated by the Italian Mission at Phæstos on the southern side of Crete. The face of this hall rose opposite the Propylæum, and it was approached either by a ramp or, as at Phæstos, by a flight of steps, that has since disappeared—this particular portion of the site having been much denuded. Together with its antæ, enclosing the steps, it must have been 20 metres deep, and its interior width was about 11·50 metres, dimensions somewhat smaller than in the great Megaron of Phæstos. It seems to have been divided into a columnar porch, a fore hall leading to a double portal, and an inner room with three columns in a cross line. This Megaron led in turn to a long hall with its axis at right angles to it, which descended to the central court by a flight of seven steps with a central column. Some idea is given of the magnificent fresco decorations that once adorned this hall by a fragment of a bas-relief, in painted *gesso duro*, showing a man's hand attaching a blue robe and gold jewel, with pendants in the shape of negroes' heads, to another life-size figure, probably of a woman, the dark tresses of whom alone have been preserved.

Immediately north of the point where this "Hall of the Jewel Fresco" descends to the central court, appears a quadruple entrance, from which steps go down to a chamber flanked by benches, forming the ante-chamber of the most perfectly preserved, and, in many ways, the most interesting, room of the Palace.

This is the Room of the Throne, discovered, though at but a small depth from the surface of the ground, in a surprising state of preservation. The remains of the frescoes—wingless griffins with peacock plumes against a landscape background of somewhat Nilotic aspect—were still clinging to the walls. Gypsum benches were ranged on three sides round the well-paved floor, which still showed traces of its central square of red painted plaster. In the centre of the north wall, between two lower benches, rose the gypsum throne with its high leaf-shaped back—this, too, once covered with coloured designs—its shapely seat, its lower arches and crocketed moulding, so strangely anticipative of Gothic architecture. Opposite, giving light to the whole, was an impluvium, except for the inverted lines of its supporting columns, almost Pompeian in character, with steps descending to an oblong basin beneath the light well, which may have served as a shallow bath. The wooden columns were found in their sockets in a carbonised condition, but together with the upper part of the walls and the roof, they have now, in accordance with my directions, been restored by Mr. Fyfe after a wall-painting of a small shrine found in the Palace, so that this little gem of Knossian architecture has been definitely rescued from destruction. Here, surely, was the actual council chamber of the Palace, and Minoan kings must have sat on what is certainly the oldest throne in Europe.

The rest of the north-western quarter of the Palace can only be passed in rapid review. At the north-west angle remains of frescoes showing zones of human figures, and a beautifully carved stone frieze with triglyphs, bore witness to the former existence of a stately upper room. Nearer the northern entrance the lower rooms of a quadrilateral area contained remarkable remains of frescoes, belonging to important upper chambers, in a curious miniature style, showing figures of male warriors and groups of ladies attired in very modern costumes and engaged in lively conversation. But what is of special interest from the point of view of the building itself is that these frescoes seem to have formed part of a great architectural piece showing walls, windows, and balconies, and the façade of a shrine. These frescoes throw a new light on the character of the upper stories of the Palace, with their combination of timber and painted stucco, their triglyph bands and other adornments.

Beneath the basement rooms of this area were deep pits, the sides of which had once been covered with smooth cement, and which, perhaps, served as the Palace dungeons. Beyond, northwards, is a portico, a paved piazza, and a large bath with descending stairs. Eastwards, this block of buildings overlooks the important northern entrance.

This northern entrance represents the main point of intercourse between the Palace and the City on the one hand, and the Port on the other. Two lines of ancient roadway in fact here converge—one leading west to a region which we know to have been covered with prehistoric houses, the other pointing north in the direction of the sea, where traces exist of an ancient haven some four miles distant. At this point of public concourse, of a character very different from anything that affected the state entrance on the west, it was natural that certain precautionary measures, if only of police, should be taken. And, accordingly, though as a whole there are very little traces of anything resembling real fortification about the outskirts of the Palace, we here see the lines of access guarded and dominated by towers and bastions in a significant way. The converging part of the two roadways is commanded by a flanking tower and bastion, opposite which are the piers of an important portico that may have served the purpose of some kind of emporium of goods under the inspection of royal officers. The inner passage to the central court is flanked by a deep recess, whence guards could sally forth on any marauding party, and between the great bastions which dominate the western side of the ascending passage are gaps as if for sentries. On the opposite or eastern side of this entrance passage are low ascending terraces backed by another high wall-line. These terraces may have partly served an ornamental purpose, and have been planted with flowering shrubs. The discovery in the entrance passage itself of parts of magnificent reliefs of bulls in painted *gesso duro* tends to show that a decorative element, probably in the shape of a fine open gallery above, was not wanting on this side also.

The great central court was originally paved with fine limestone slabs, best preserved in its north-west corner. Its length was about 54 metres, and its breadth varies from about 22 to 24 metres. The dimensions of the central court at Phæstos are somewhat smaller, namely, 46·60 by 22 metres.

We now turn to the Palace area east of this great court and of the northern entrance, where, owing to the slope of the hill, the ground floors are all on a lower level. The north-eastern quarter, now much denuded, seems to have been occupied by slaves and artisans; and there were here found a group of magazines filled with rustic pottery apparently for their use, besides large rubbish heaps of the same. Further south are paved halls and corridors containing, both on their surface and in the cellarage beneath, traces of a very different class of inmates. Here came to light a truly royal draught-board of ivory, magnificently inlaid with silver and blue enamel, set with crystal plaques and overlaid with gold plate. Here were found the ivory draughtsmen, and remains of a porcelain mosaic of extraordinary interest. The glazed plaques that composed it, probably belonging to a wooden chest, exhibited, besides scenes of peace and war, actual elevations of the houses of the Minôan town, with three or four stories, and windows with four or even six panes, apparently filled with some substitute for glass, such as oiled parchment. Here too were signs of industry on a princely scale, an olive press with its conduits and connected system of magazines with huge oil-jars, and the workshop of a palace sculptor, containing, beside an unfinished vase of the same kind, a finished masterpiece in the shape of a huge marble amphora with fine decorative reliefs, and so ponderous that it took eleven men with poles and ropes to remove it from the site.

The lower rooms about the olive press area with their exceptionally massive walls, and especially the great buttresses that here run out from the terrace wall of the central court, unquestionably give the outline of a great upper hall or Megaron. This Megaron, the entrance to which must have been from the level of the Central Court, seems to have corresponded in its general arrangement with that of which the indications have been noted in the western wing of the Palace. It must, however, have been larger, its interior dimensions measuring about 15·50 metres in depth, by 14·50 in width, the corresponding internal measures of the great hall at Phæstos being about 14 by 13·75 metres. Of the importance of this great Megaron, and its magnificent decoration, the contents of the basement spaces to the east and of a part of the room of the olive press below bear ample witness. Here were found not only pieces of bull reliefs analogous to those from the northern entrance, but remains of painted human figures, both male and female, moulded in high relief in *gesso duro*, and showing, in their reproduction not only of the general contour but of the individual muscles, sinews, and veins, an extraordinary fidelity to nature. Fragmentary as they are, they represent the highest achievement in stucco relief by the Minôan artists, and found their fitting place in the largest Palace hall.

It was at this point, on the southern borders of the olive press-room and the substructures of the great Megaron, that the course of the excavation took a most unexpected development. Beyond this line the floor level was found to descend suddenly 4·20 metres —the depth of another story—or some 8 metres, in other words, two stories—below the level of the Central Court. More than this, a paved corridor that ran past the bays formed by the supporting piers of the great Megaron was found to abut on the middle landing of a fine stone staircase. One flight of this, flanked by a balustrade resting on steps with sockets for its columns, ascended to another landing, above which again two great blocks in the middle wall of the staircase showed the traces of the steps of a still higher flight running to the level of the Central Court. The middle landing, already referred to, gave access to two other flights, answering to these, below, and it was possible, by taking all the precautions of mining operations, actually to excavate the lowest flight of stone stairs below the ascending flight above. Such a result is probably unparalleled in the history of excavation—flights of stairs one above another being unknown even in Pompeii.

The lowermost flight of this quadruple staircase descended into a portico forming a wing of a fine columnar hall, between which and the staircase wall was a light area. The interior of the hall was paved and lined with gypsum slabs, the small court on which it looks being simply cemented. This hall, to which I have given the name of the "Hall of the Colonnades," is one of the finest features of the building. The small court on which it opens was flanked on one side by the double line of the ascending staircase with window openings below it, the balustrade of its upper flight rising step-wise, and showing at intervals the sockets of its colonnade. The same upper balustrade with its pillar sockets is continued along its northern side, while its south wall, consisting of twelve courses of good limestone masonry, with an intermediate interstice for woodwork, showed the remains of a double window that lit another, apparently wooden, staircase beyond. The whole effect of the tiers of colonnades and their harmonious gradations, following the staircase lines, recalls the entrance court of an Italian Renaissance palace.

The middle and the lowermost landing of the stairs lead respectively to an upper and lower corridor, forming a central axis on this side. The upper of these descended by a flight of stone stairs towards the lower terraces of the east slope, and perhaps to a small water-gate on the former course of the stream, that has now withdrawn to the other side of the valley.

The lower of these "east-west" corridors, of which the north arcade of the Hall of the Colonnades is here regarded as a section, gives access to the largest existing hall of the Palace, to which, from the signs repeated on its limestone blocks, the name of the Hall of the Double Axes has been given. It consists of a light area, a columnar hall, an inner space surrounded by pillars, and at its further or eastern end two lines of portico facing east and south. Together with these porticoes the Hall of the Double Axes occupies an area of about 250 square metres.

An interesting feature here are the remains, now supported *in situ*, of an upper hall, with pillars answering to those below, and with parts of its wall-painting—a palm tree and horn-like objects are visible—still clinging to its northern wall. A door opened into this upper hall from the upper "east-west" corridor and from a small private staircase on the other side communicating with the "Queen's Megaron."

Beyond this block, containing the grand staircase and the two columnar halls that seem marked out for state and semi-public use, is a section lying due south of it, and belonging to the same deep cutting, which has a special interest, from its obviously private and domestic character. This is not necessarily a "haremlik" in the strict Oriental sense, but there can be little doubt that it was the principal scene of the family life of the Palace, and, as such, a part of woman's domain.

The centre of interest in this domestic quarter is a very original chamber approached through double doorways by a crooked passage from the Hall of the Double Axes, to which I have given the name of the "Queen's Megaron." It is divided into two parts by a stylobate, with pillars at intervals on a central ledge, leaving ample openings for light, and which shows on each side of it remains of a shapely bench of wood and plaster. The outer of these two benches faced a portico and small light area entirely shut in from the more public quarter beyond. The inner division of the Megaron has another stylobate on its south side, flanked by a similar bench, and looking on another light area of elongated form, the back wall of which steps back to facilitate the incidence of the light. On the west side again of this inner part of the hall is a balustrade and opening leading to a small bath room, with its fine gypsum lining slabs intact, and above them part of a brilliant stucco frieze of spirals and rosettes in position.

A painting representing the upper part of a lady in energetic action seemed to have been derived from the north wall of the Queen's Megaron. More interesting still was the system of decoration adopted in the light areas on either side. Along the remains of the back wall of that on the eastern side were found heaps of fallen plaster, showing a variety of fish, including part of two dolphins, rocks with their coralline attachments, and blue wreaths and coils of spray to indicate the sea-water. In the southern light area, on the other hand, was found another heap of fallen stucco, containing parts of a brilliantly plumaged bird in a curious technique between intaglio and relief. It looks as if in both cases a system of pictorial illusion had been resorted to, like that so familiar in the small courts and areas of Italian villas, where the blind wall spaces are filled with views suggesting a free prospect over land or sea.

A small private staircase leads up by two flights of stone steps from the Queen's Megaron to the chambers, still partly traceable above this room and the adjoining Hall of the Double Axes. There are, moreover, indications that this staircase was continued to a still higher story. On the west an upper and lower passage leads to a complicated series of rooms originally provided on one side with a wooden staircase, which seem to have been used for various domestic purposes. There is here a small court suggestively marked with the distaff sign; an inner room where valuables seem to have been stored, of which various traces, including a gold heart and parts of a crystal bowl, were found, and other rooms which may have served as bedrooms, including one off which opens the nearest approach to a modern w.c. yet found in any ancient site. Besides the passage to the main drain, it is provided with an actual flush pipe and shows traces of a wooden seat.

Nothing indeed is more extraordinary than the remains of an elaborate drainage system existing throughout all this section and common to the upper as well as the lower story. The limestone slabs of parts of the pavement, the pillar bases and door jambs, the walls with painted stucco still adhering to them; in one case, even a stone bench in position, are here preserved on the upper story level. From these floors a succession of stone shafts—one apparently connected with another latrine—descend to a network of stone ducts, large enough for a man to make his way along them, beneath the floor level below. It may be added that near the olive press area were found fine terra-cotta drain-pipes fitted into each other, with stop-ridges and internal collars to grip the cement, which must be considered to equal the most modern forms, though following out a different principle.

Beneath what seems to have been a wooden staircase, lit by a window from the Hall of the Colonnades, was a small store closet, in which apparently part of the treasure kept in the neighbouring inner room had been hurriedly deposited. Here were found ivory statuettes of leaping youths, obviously belonging to a group taken from the bull-ring, which in their spirited and at the same time minutely naturalistic execution, exceed any work of sculpture of this period as yet brought to light. Very animated paintings representing analogous scenes from the bull-ring, in some of which female toreadors take part, formed a favourite subject of the Palace wall-paintings. The room above the Queen's Megaron appears to have been adorned with miniature designs of this class.

South of the domestic quarter above described is a region constructed on a higher ground level, containing a court with an altar base, flanked by a small bath and a connected sanctuary. This included a little shrine with the vases of offering still in position before an elongated base, upon which rested images of votaries and female divinities, sacred horns of stucco, and a small double axe, the emblem of the Cretan Zeus, and here used as a fetish idol. This discovery in the Palace of a shrine of the Double Axe, and its associated divinities, derives a special interest from the connection already established on philological grounds between *labrys*, the Carian term for the sacred Double Axe, and the name of the Labyrinth. The remains of the great building itself, with its mazy corridors and subterranean ducts, seem to have been the local habitation and the home of many of the elements of the later myth.

The south-east corner of the building shows a staircase in two flights apparently in communication with a postern gate, and well-built rooms as yet incompletely explored, with fragments of fine wall-painting exhibiting myrtle sprays and lilies. In a neighbouring corridor was found a fresco actually containing an early representation of the Labyrinth in art.

Finally, along the lower terrace on the eastern slope are remains of a quadruple line of walls built at narrow intervals from one another, and a bastion with two descending flights of steps, one of them flanked by a remarkable water-runnel. This runnel is made to follow the steps in a succession of descending curves, and is led by a crooked channel to a settling basin, on its way to a tank below. It is obvious that various delicate problems regarding the moderating of the flow of water and the deposit of sediment had been here carefully worked out.

It is possible that the four-fold repetition of the line of wall on this side was due to the undermining action of the stream which then, no doubt, flowed in greater volume and at a higher level probably on this side of the valley. This quadruple line represents the eastern border of the Palace.

Both the construction of the Palace and its general design and distribution, as briefly reviewed in the above sketch, present some remarkable contrasts to the Mycenæan palaces, such as those of Tiryns and Mycenæ itself, hitherto known on the mainland of Greece. The great surrounding fortifications, the massive Cyclopean walls and galleries are here wanting. Save for the defensive works, to be regarded as primarily due to considerations of police, about the northern entrance, and what are really supporting walls on the east, there is nothing here that can be strictly regarded as fortification. The outlines of the palace citadels of Tiryns and Mycenæ eagerly seize and follow the defensible contours of the site. Their interior is divided into irregular courts without real cohesion. At Knossos, on the other hand, the whole outline of the Palace is laid down in definite lines without regard to the site—or rather a site has been chosen which allowed free scope of action to the architect and engineer. The island civilisation was here at home, and its true bulwarks were the "wooden walls" of the Minôan navy.

Here and in the Palace of Phæstos, which among known buildings supplies the only real parallel, everything is arranged according to the most elaborate planning. The lines are at right angles to one another; the whole design divides itself into zones and rectangles. The Palace of Phæstos—though in its present state not occupying so large an area, and for the most part consisting of walls stripped bare of paintings and reliefs, and rooms devoid of the various masterpieces of the art of Dædalos and of the clay archives that attach such inexhaustible interest to the Knossian pile—has this advantage, that its great halls rest on solid terraces of rock instead of on the less secure foundation of lower stories. The plan there, as it stands, is more simple and grandiose, and it is only when with its help we reconstruct the great upper halls above the smaller basement rooms of Knossos that the extraordinary similarity of plan and construction is brought home to us. The west court, the very recesses of the western wall, the porch, the door jambs and pillar-bases, the corridors, the store-rooms, the baths, the great Central Court, the prevailing plan of the Megaron, the light-wells, the absence of fixed hearths, are all repeated, and even the individual measurements show a great tendency to approach one another. The Palace of Phæstos when complete was a somewhat smaller building. It was pre-eminently a state dwelling, not cumbered with the same needs of vast magazines and offices, or of the stories piled one above the other for the accommodation of the crowded inmates, that we find in Knossos, the capital of the island Empire, and the true centre alike of business and government. At Knossos the remains of these upper stories, which add so greatly to the plan, are a most distinctive feature, which cannot be matched by any other sites of the classical or prehistoric age of Greece.

Comparing the general plan of the Palace of Knossos with that of Phæstos as completed from the parts preserved, we are struck with a systematic arrangement which has a profound comparative interest. In both cases we see a large, square-shaped building containing a central rectangular court that seems to have been approached at right angles by four main avenues. At Knossos we have traces of a southern stepway and entrance, and of a fine north passage debouching on the middle of the central court on that side. Again, from the middle of the east side of the court the "east-west" corridor descends at right angles towards the outer eastern wall, where there seems to have lain originally the water-gate of the Palace. Immediately opposite the opening of this eastern line on the other side of the court is a central break in the western division of the building, consisting of the room of the column-bases, which has the nature of an ante-chamber and passage-room, and the two pillar-rooms behind with their short flanking corridor. It is true that in this case this cross-avenue does not go through to the line of the west wall, though if prolonged it would come out not far from the west portico. But it is all the same a significant survival of an old and simple ground plan scheme, which seems to have been modified by the architect in order to bring round the state approach to the southern Propylæum.

At Phæstos the principal public entrance seems originally to have been on the south side of the Central Court.* Opposite it is a dividing corridor at the north end of the court, the major axis of which runs, as at Knossos, from north to south. On the west side, again—in this case in relation to the portico of the state entrance—a fine corridor runs towards the middle of the court. The eastern wing has been much denuded.

But it is impossible, in view of the fundamental arrangement thus revealed to us, pointing in both cases to a more or less square building with central court, crossed at right angles by two main lines of approach, not to recall the familiar features of the Roman camp, and its still more remote prototype as traced by Chierici and Pigorini in the prehistoric pile-settlements, the "Terremare" of the Po Valley. We have here, in fact, lines analogous to the *Cardo*, the "north-south" passage which was, as apparently at Knossos, the main axis in the Roman camps, and the *Decumanus* that crossed it at right angles from east to west.

We note, indeed, further parallel lines answering to the *Cardines* and *Decumani Minores* of the Roman plan. There is, however, this distinction, that the principal halls rise on the sides, and do not—like the Prætorium—occupy the centre of the court which forms the converging point of the main passage lines. Neither have we as yet found anything like the *templum*, such as seems to have existed in more than one Italian terramara † near this point of intersection. But the quadrilateral form, the orientation, the existence of *Cardo* and *Decumanus* with their minor parallels, and the inner court itself, are points of comparison of a very suggestive kind, and seem to go back to an ancient European system of arrangement, sister forms of which were preserved by prehistoric Crete as well as Italy.

The palaces of Knossos and of Phæstos belong in their existing shape approximately to the same period. That period, as shown by the earliest remains of vases and other relics found above the floor levels in each case, is somewhat more remote than that to which Mycenæ has given a name, though in both cases modifications of the building were carried out during the Mycenæan period proper. The best positive chronological data are supplied by the lid of an Egyptian alabastron found, with remains of indigenous stone vases belonging to the early Palace period, on a floor-level near the northern bath. The lid has a beautifully cut cartouche of King Khyan, of the Fifteenth Dynasty, who was the principal ruler of the foreign or Hyksôs conquerors in the Nile Valley. He seems to have reigned about the eighteenth century B.C., and, considering the rarity of his monuments in Egypt itself, it is difficult to suppose that objects with the name of this Pharaoh could have reached Crete at a later date.

The high level of civilisation reached in Minôan Knossos by the date of the foundation of the existing Palace, so conspicuous alike in its architecture and decoration, points itself to long centuries of earlier development. It is not surprising, therefore, to find beneath the later foundations the remains of a still earlier Palace, the lines of which seem partly to have been followed in the later work. The Thirteenth Dynasty monument—not later than 2100 B.C.—found beneath the pavement of the Central Court, seems to belong to this earlier building, and a series of exquisite painted vases of eggshell fabric, in design and colouring never certainly surpassed, point, together with other relics, to an intimate acquaintance with Twelfth Dynasty designs, going back therefore to about 2800 B.C. But beyond this, again, we have evidence of still earlier princely occupation, and fragments of imported Egyptian vases of diorite and obsidian that take us well back into the Fourth Millennium before our era. And still beyond this, underlying the whole hill-top on which the Palace stands, is a vast Neolithic settlement replete with stone weapons and implements of primitive pottery and idols, which carries back the antiquity of the site beyond the limits of such records as were later supplied by this ancient intercourse with Egypt.

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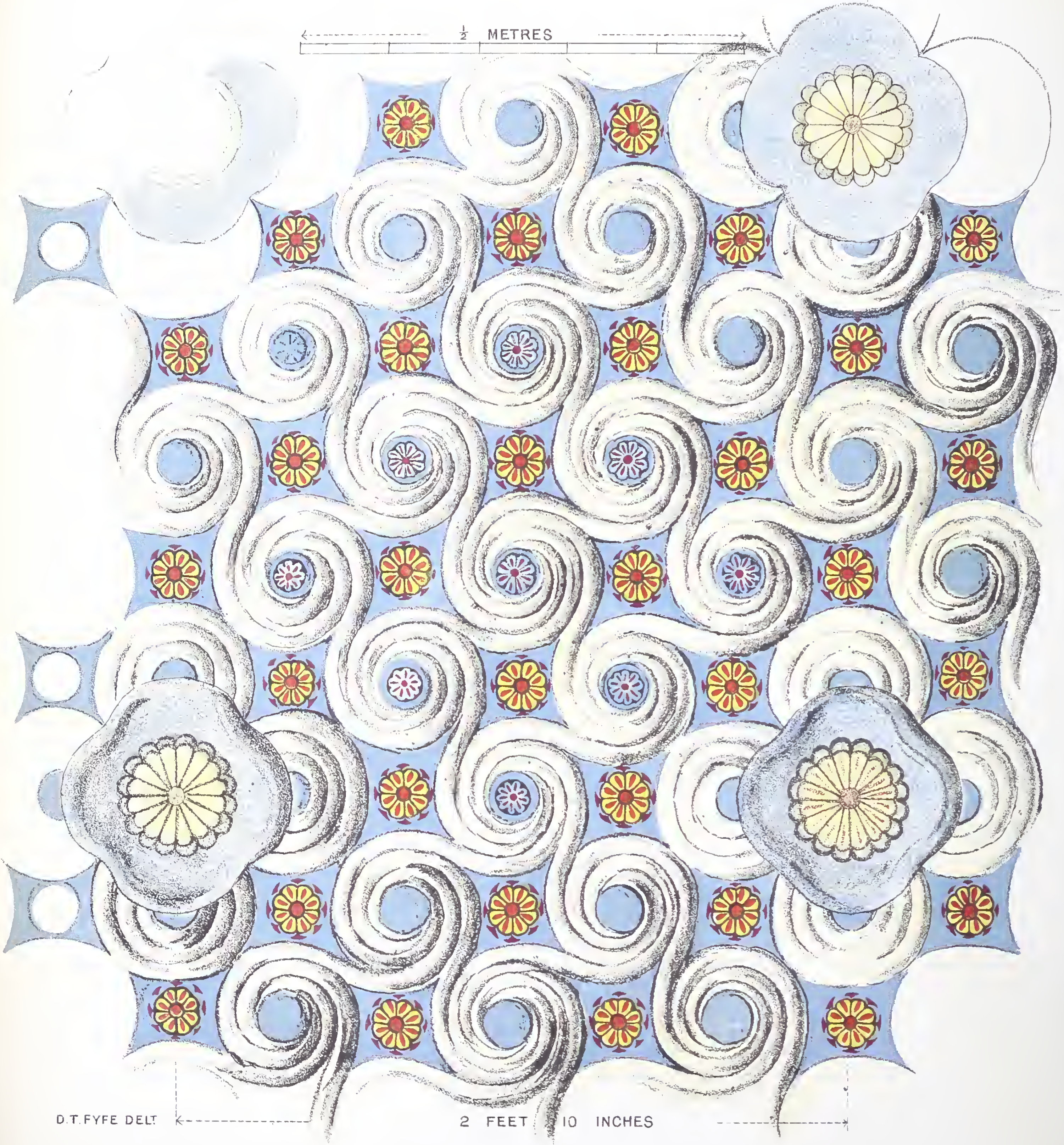
* Luigi Pernier, "Scavi della Missione Italiane a Phæstos." Rapporto Preliminare (*Mon. Ant.*, T. xii. 1902, p. 59).

† See especially Pigorini "Terramara di Castellazzo di Fontanellato" (*Notizie degli Scavi, &c.*, 1895, p. 14, *sqq.*).

THE PALACE OF KNOSSOS.

Plate 1.



RESTORATION OF A CEILING IN MODELLED AND PAINTED PLASTER.

C.F. KELL & SON, LITH. 8, FURNIVAL ST HOLBORN, E.C.

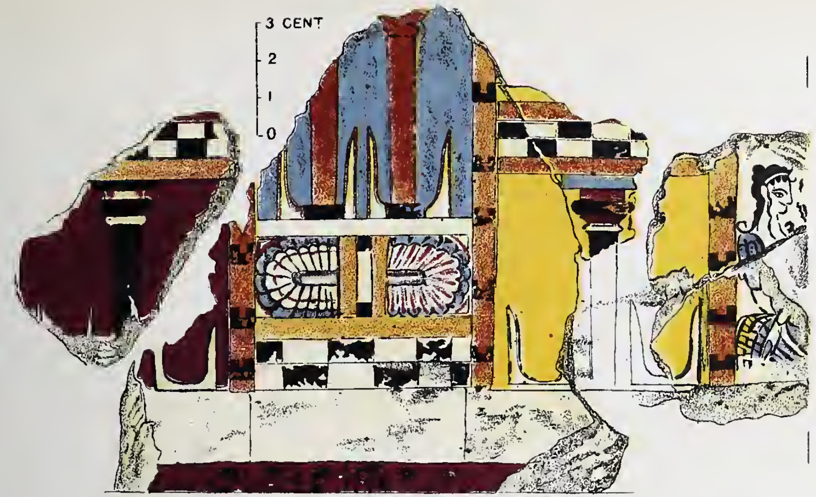


FIG. 1. CENTRAL PART OF THE "TEMPLE" FRESCO.

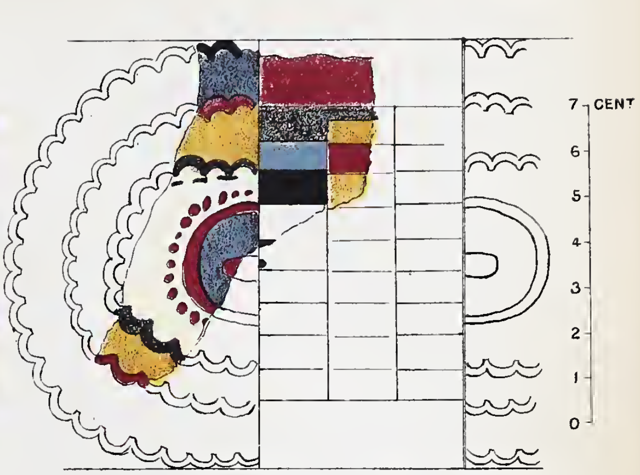


FIG. 2.

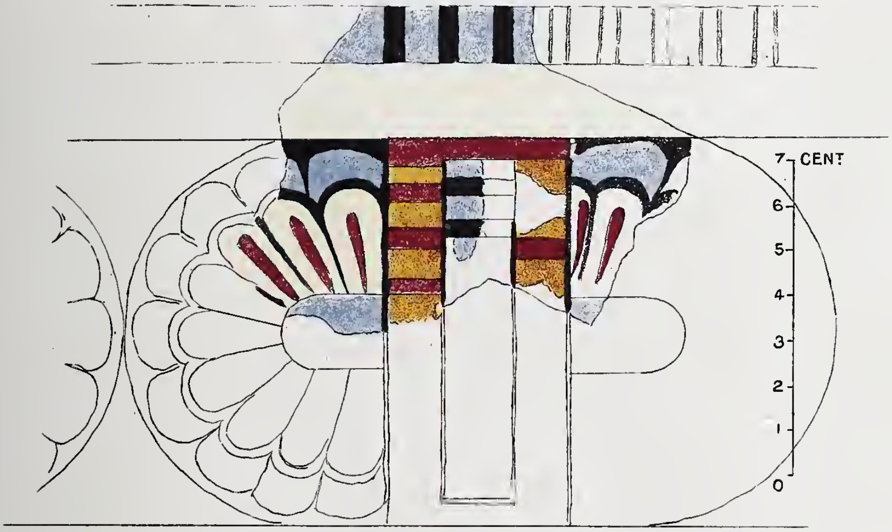


FIG. 3.

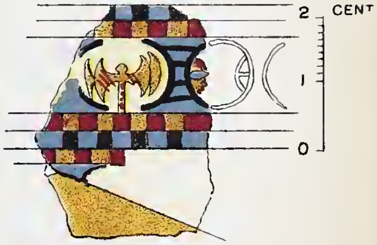


FIG. 6

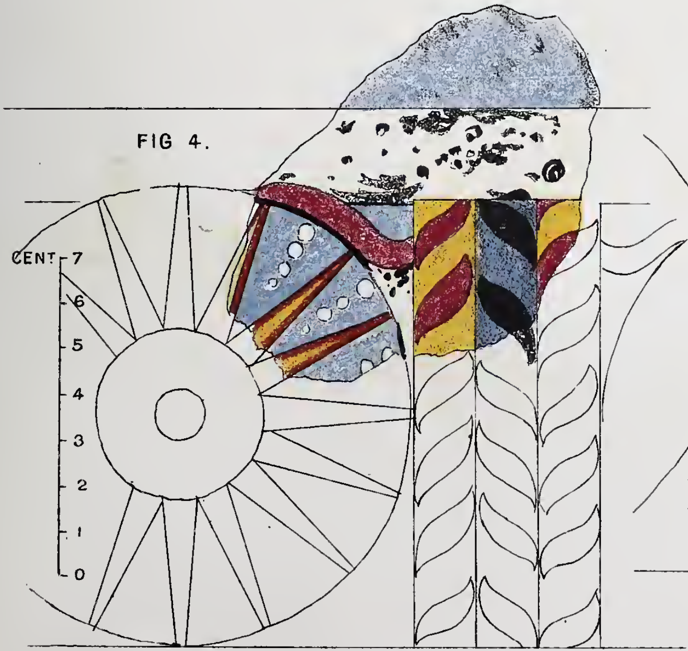


FIG 4.

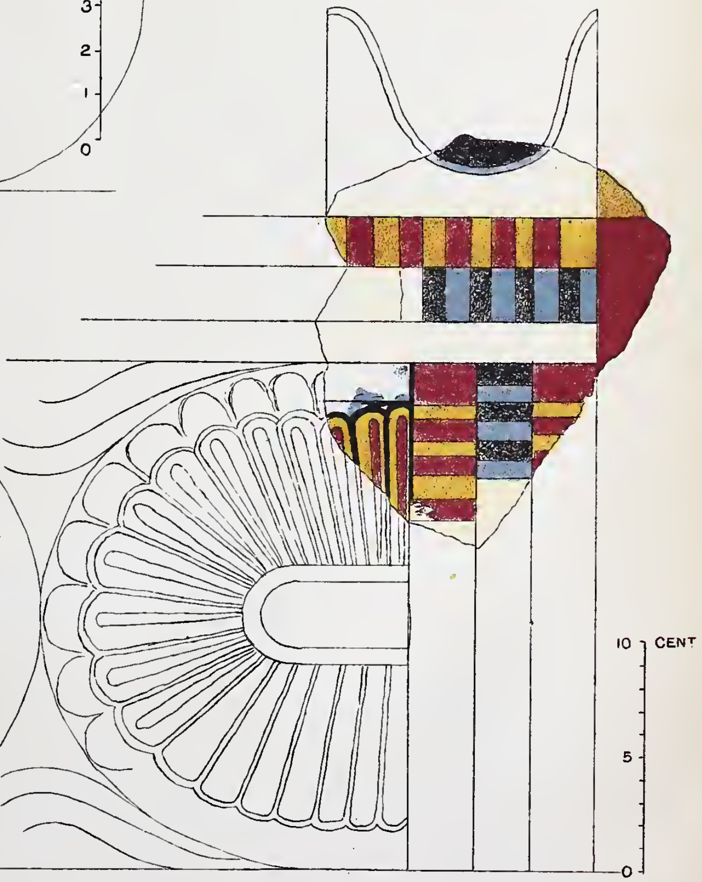


FIG. 5.

VARIOUS "TRIGLYPH" MOTIVES IN PAINTED PLASTER.

PAINTED PLASTER DECORATION AT KNOSSOS.

WITH SPECIAL REFERENCE TO THE ARCHITECTURAL SCHEMES.

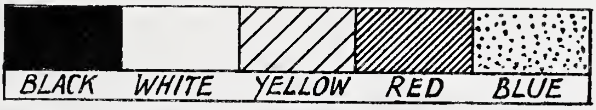
By THEODORE FYFE,

ARCHITECT TO DR. EVANS'S EXCAVATIONS AT KNOSSOS.

PREFATORY NOTE.

THE following remarks are based on three years' acquaintance with the excavations carried on at Knossos in 1900–01–02. Their object is to illustrate the chief detail forms of Knossian decoration, by selection from numerous examples; to record the chief decorative motives that exist in the palace, *in situ*; and to compare these with the many important fragments of "picture" fresco which have distinct reference to architecture.

Most of the illustrations have been made from tracings of the actual fragments; but many are naturally diagrammatic when reduced to black and white, as certain forms can only be represented by brushwork. Scales of 3, 5, 7, or 10 centimetres are appended to almost every diagram, and in some cases a scale of inches as well. The colours of the fresco are represented in the black and white drawings by the annexed code, which holds good throughout, except where otherwise stated.



Code of colours used in illustrations, except where otherwise stated.

SECTION I.

The finds of coloured stucco at Knossos constitute one of the most important artistic results of the excavations. Apart from the masterly full-size figure-work, and the fragments showing natural forms generally, there is a wealth of material which can be called decorative in a narrower sense, and which is important, especially on its architectural side. At Dr. Evans's request, therefore, I have prepared the following paper. It cannot be regarded as final, because much of the palace material is yet unpublished; but it will give some indication of the subject.

At the outset we must notice the distinction between *large-scale ornament*, much of which was found *in situ*, forming controlling lines of decoration, and *small-scale ornament*, which formed a setting for the "picture" fresco proper. This distinction is not always easy to realise, and, unfortunately, no piece of painted plaster showing small-scale work was found large enough to exhibit the exact relation such work had to the rest of a large wall surface.

Many examples, however, show this small-scale ornament in connection with *picture* fresco, which latter forms an important class by itself. As illustrating undoubted architectural forms, certain fragments of this will be found very relevant to the subject in hand, and it will be useful to illustrate them along with the actual construction of the palace; always bearing in mind that in the smallest or "miniature" style of this picture-work, the representations are often very conventional, from the necessity of illustrating various planes in juxtaposition on the flat. An astonishing variety of scale was indeed probable on the Knossian walls—like Egyptian work, which in all its periods seems to have abolished perspective, as we know it, and to have made that art quite arbitrary, perhaps subservient, to a fixed code, in which religion may have played some part. From the way in which the Knossian fragments were found, it seems probable that the parallel to Egyptian work holds throughout, and that small and large pictures were placed side by side.

TREATMENT OF MATERIAL.

For the most part the plaster found had a flat surface; but there are some interesting fragments which show an original and peculiar method of modelling. This method considers only certain broad facts of the design, and gives a general "wavy" appearance to the plaster surface; it makes no attempt to particularise the detail, which is chiefly painted on (see fig. 38, p. 117). The best examples of this method represent naturalistic forms, and, as such, do not concern us here; but the very general use of it must have considerably affected the appearance of the palace decoration. The remaining surface treatment to be considered is the definite moulded work, of which there are some interesting examples, and which, taken in combination with similar work found in stone, give a fair idea of the prevalent mouldings employed.

As a plaster finish was chiefly applied to rough rubble walls, largely composed of clay, the backing to the finer plaster is often very thick; the total thickness being sometimes 2½ or 3 inches (6–8 centimetres), of which the usual ¾ inch (2 centimetres) is taken up by the finish. In certain thin clay walls, however, corresponding to our 4½-inch partitions, the plaster is applied very thin, having a total thickness of about 1 centimetre (or less than ½ inch). The finish has often almost separated itself from the backing, especially where the latter is chiefly composed of clay, with little or no gypsum.

In general, plaster thicknesses are very variable, from the necessity of making up the inequalities of rough wall-surface. As gypsum was largely used all over the site, and was evidently readily obtainable, an excellent composition of plaster could be obtained. Large surfaces of clay backing exist *in situ*, with scored lines to form a key for the finish.

The colours next deserve consideration. Their permanence is noticeable, and some fragments show a surface more resembling marble than plaster. The colours can usually be scrubbed with a hard brush, and even scraped with a knife. The term *fresco* could almost be applied to this painted plaster. It is nearly certain that the large surfaces were laid on in coats when the plaster was wet, and the details painted on before the ground was dry. At present the colours scale off like enamel when a knife is used; the reds run when too much water is applied.

Regarding the composition of the colours, I may quote from Professor Church's book * certain colours found by Professor Petrie in the Hawara graves of the Fayûm, which must equally apply to Knossos.

"*White*, mainly gypsum.
"*Yellow ochre*, having, however, almost precise hue of true antimony yellow.
"*Red lead*.
"*Dark red*, due to ferric oxide.
"*Pink*, probably derived from madder; and a *blue cupreous glass*."

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* *The Chemistry of Paints and Painting*, by A. H. Church, F.R.S., 1901 (p. 303).

To these we must add *black*, which is readily obtainable from many sources ; *grey*, derived from the same ; *brown*, probably umber ; and a *dull green*, resembling *terre verte*. It would be interesting to know if the Knossians were acquainted with this fine and exceedingly

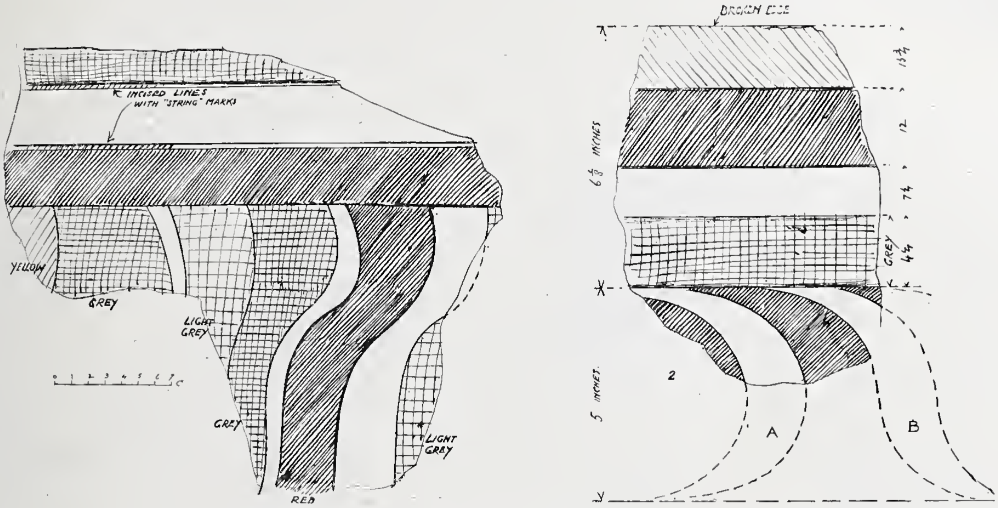


FIG. 1. FIG 2

EARLIEST PALACE FRESCO.

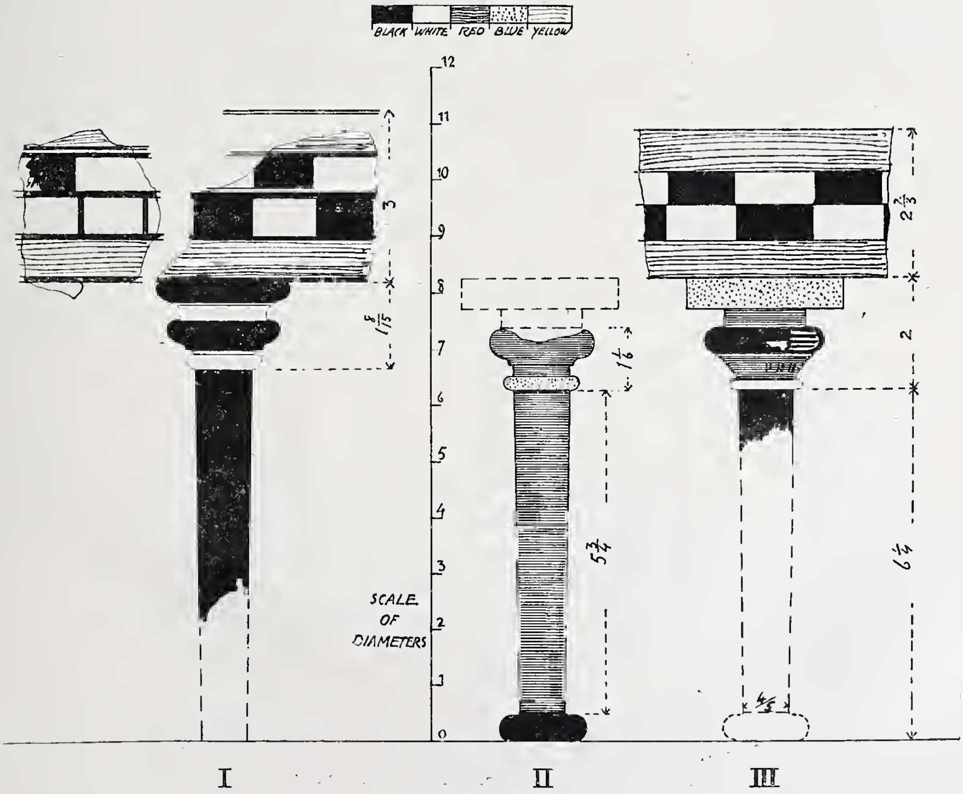


FIG. 3.—THE MYCENÆAN ORDER. FROM THE "TEMPLE" FRESCO.

permanent colour. Various intermediate shades of the above colours are also found, such as an *orange* and a *blue-green*, readily obtainable from copper, or by mixing with yellow, &c.

A note may be added about certain proprieties observed in using colours. Red and yellow usually go together, similarly blue and black; in a border these combinations are invariably observed.

EXISTING PALACE DECORATION *in situ*.

It is necessary to give some idea of the general wall-treatment of the rooms in the palace. Throughout it is noticeable that the value of the horizontal line was appreciated, that line forming an important feature of the Mycenæan method of wood-construction. Even the strongest walls at Knossos were partly constructed of wood: stone was chiefly a decorative material, and, otherwise, was almost exclusively used in courts which might have been open to the weather.

In a wall of four metres (or, roughly, 13 feet) in height, the two lowest metres are appropriated to the dado, the top of which also marks the height of the door. At this height, therefore, a strong horizontal constructive line is employed, which takes in the window and door lintels, and forms a division between the upper and lower walls of the room. The ends of wooden cross-beams, going through the wall, appeared in this horizontal line. The cross-beams acted as stiffeners in rubble-walls, and as supports for the upper part in stone walls (see fig. 26, p. 115). They evidently gave rise to a most important motive in decoration, a motive constantly met with in the horizontal bands of recurring circles decorated as rosettes. The lower part of the wall is, usually in the better rooms, finished with large gypsum slabs, which formed a handsome dado. Above the line the plaster-work begins, and is divided into horizontal strips according to the nature of the design. In one of the east-slope halls, a large fragment of frieze was found in position immediately above the line (see fig. 43, p. 119).

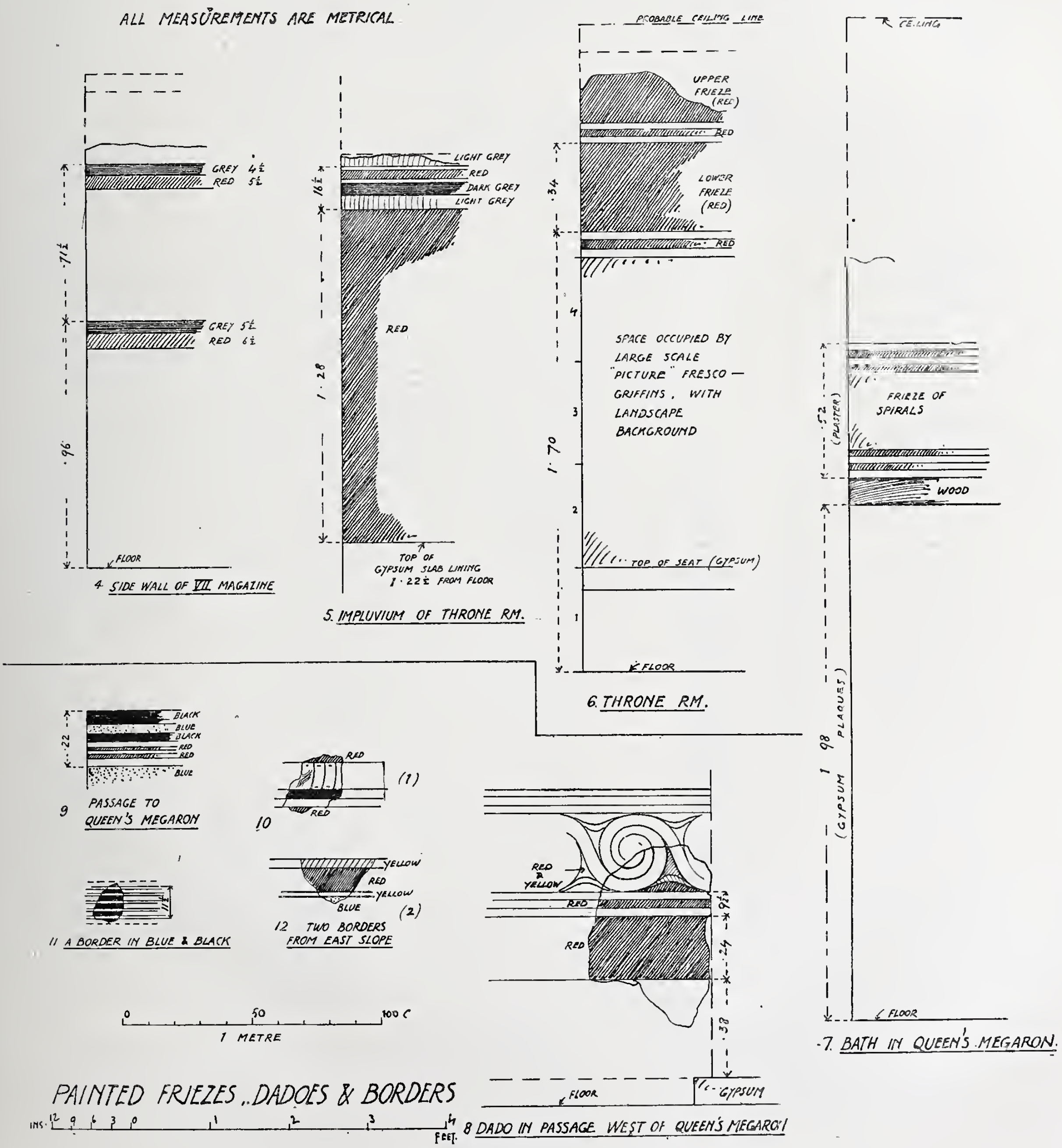
Where the entire wall was plastered, the decoration of the lower part sometimes took the form of an imitation of marble or fine-grained stone panelling, and one important example, in particular, found on the east slope, shows such a scheme (see fig. 13) with the panels probably 2 metres high, and the "graining" very completely represented. This dado may have been the later form of finishing in a grand hall, while the gypsum panel dado was the earlier.

Fig. 8 shows an important variation from the above arrangements, in the passage leading west from the "Queen's Megaron." Here, a large band of running spiral was found, but forming the top of a dado, much lower than the same motive in fig. 7. A convenient field for "picture" fresco seems to be afforded by the space above this dado; the corresponding space in fig. 7 being too high up.

In the western part of the palace, where the existing rooms are not so high, different arrangements prevail. The throne room shows the best example of the finish of the top part of a wall (see figs. 5 and 6). Here, the entire wall surface above the stone seats was finished in plaster; the lower part devoted to picture fresco (griffins with landscape background) and the upper part plain; two sets of frieze lines were found in position. The magazines, and the rooms to the east of the long gallery (which really formed a basement), were probably all decorated with plain plaster and frieze and dado lines; as is clearly shown in the case of the magazines by many complete examples. One of these is shown in fig. 4.

The examples found *in situ* show that dark red was the prevailing tone of plain painted plaster. A dead white is rarely used in connection with it, except to render certain natural forms. A yellowish white and a grey are the usual relieving tones used along with red for borders.

Whether in relief or on the flat, it is certain that at Knossos, as in Egypt, all the plasterwork was finished in colour, forming a complete system of colour decoration, which included the walls, the ceiling, and possibly even the gypsum-slab dadoes. This last, however, is not quite clear, and a contrast between the handsome alabaster and the coloured plaster may have been aimed at. The same may also be true of the beautiful fragments of stone, architrave



FIGS. 4 TO 12.

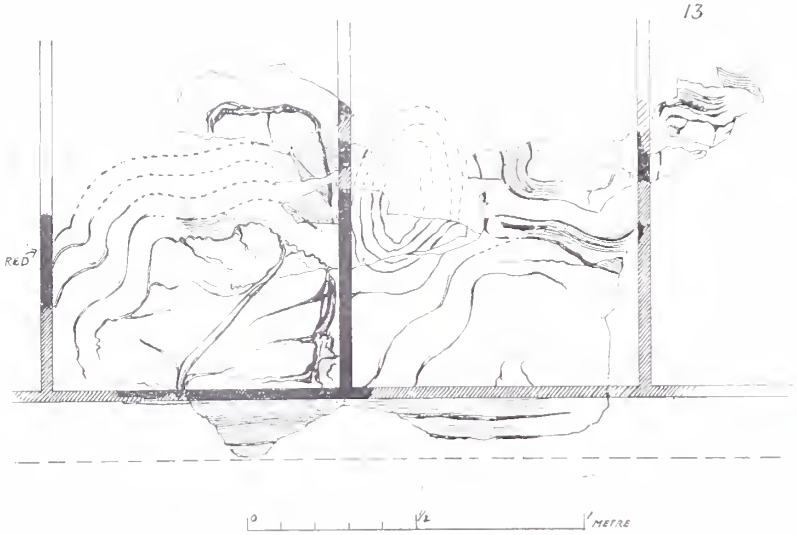


FIG. 13.—PAINTED PLASTER, REPRESENTING IMITATION MARBLE PANELLING.

In dark red on a light yellow ground, with shadings in darker yellow and orange and some black lines.

or frieze, that were found.* It is probable that these, at least, were painted, from the evidence of certain faint traces of colour found on them.

The finishing of door-jambs, on the ingoing, affords a proof of the partiality for striped decoration among the Knossians. The constant method is to alternate strips of plaster with posts of wood vertically (see fig. 14); the edges of the plaster being splayed back at an acute angle, to give the wood a catch, and not splayed at an obtuse angle, to give the plaster a hold on the wood, as is done nowadays. The number of plaster strips varies according to the depth of the door—as many as five being sometimes found.

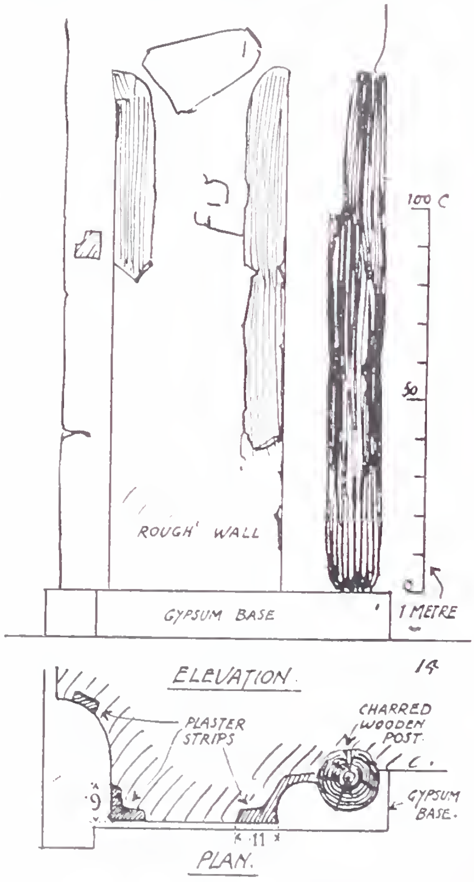


FIG. 14.—A DOOR-JAMB.

The subject of door-finishings leads us to consider what place vertical lines had generally in Mycenæan schemes of decoration. Their system of wood-construction obviously entailed vertical posts as well as horizontal beams, and many of the rough walls have been found very completely divided into vertical sections, by wooden posts or the spaces for them. These run from the floor up to the main horizontal line. Above that, the ruination has in every case been too great to enable us to determine the construction. In any case, it is doubtful if the vertical constructive lines were always made to appear in the decoration. Sometimes they almost certainly did appear, and the wood was probably painted and left flush, or almost flush, with the surface of the plaster. The fondness of the Mycenæans for dentil decoration, and the existence of the marble-grained plaster, in panels, go far to prove this; as also do several architectural details from the "miniature" fresco. It is probable that vertical division was not confined to the lower walls, but also occurred in the "picture" frescoes above. Wherever fragments of these were found, borders are apparent, and in one important example of a picture scheme—the so-called "cow-girl" fresco—the vertical divisions are strongly marked by the same elaborate borders as the horizontal ones.

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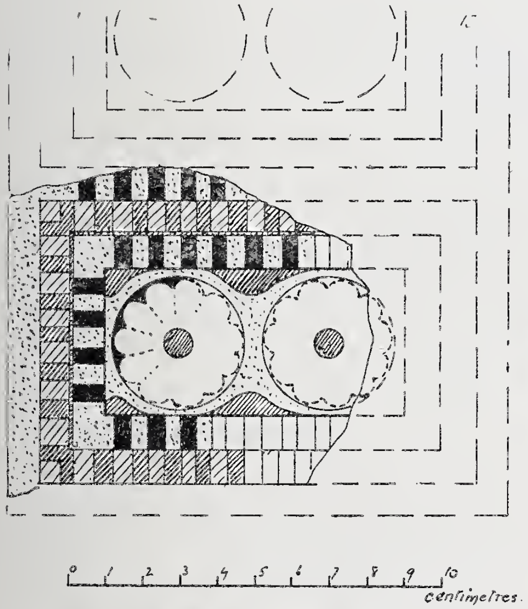
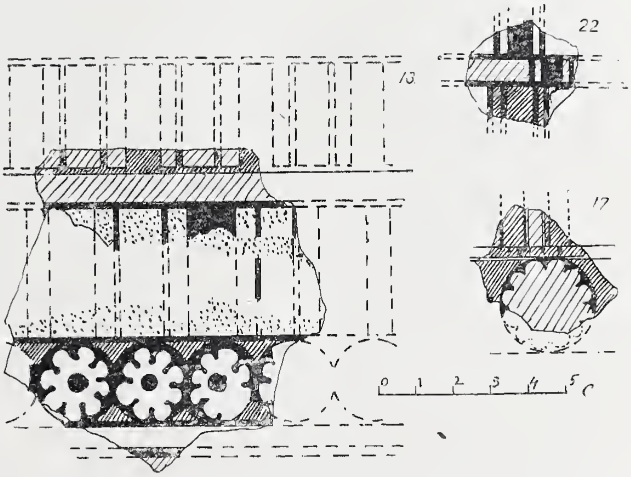
* See in *The Annual of the British School at Athens* (No. VII. 1900–1901. Macmillan & Co.) "The Palace of Knossos," by Dr. Arthur J. Evans, F.R.S. (p. 55). Dr. Evans believes that the breastwork of the stone seats in the Throne-Room was painted with a scheme of triglyphs and metopes, an idea suggested by the interesting parallel at Phæstos, where similar seats have carved triglyphs. Minute traces of colour do indeed exist on the Knossian seats.

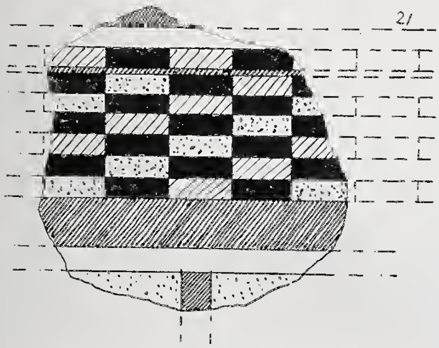
Another fact concerning the method of applying plaster deserves to be noticed. In some cases edges were found, marking the end of a motive, but not necessarily the end of a plastered surface. This seems to indicate that, when practicable, the plaster was prepared in strips, and painted before being applied to the wall. A good example is the fragment of spiral frieze before-mentioned (see fig. 43, p. 120).

PICTURE FRESCO RELATING TO ARCHITECTURE.

An important class of picture fresco in the so-called "miniature" style throws much interesting light on Knossian architecture. Fig. 3, which shows the Mycenæan order, is taken from this class, as also are figs. 15–22. Of the latter, figs. 15 and 16 show examples which become doubly interesting by comparison with the small house mosaics found in the excavations of 1902,* and they may each represent part of the picture of a house. Fig. 22 appears to be part of some wooden construction; while fig. 21 obviously shows a section of wall-surface, the stonework being represented as chequer-work in black and blue and yellow; perhaps this is the intermediate part of a wall, as the post of a window seems to appear below. Returning to figs. 15, 16, and 17 we see there the evidence of decorated beam ends; in the former case, perhaps in a panel, and in the two latter cases, in a containing beam supporting vertical construction.







FIGS. 15–22.—ARCHITECTURAL FRAGMENTS OF "MINIATURE" FRESCO.

To the same class of work—found, in fact, in the same deposit as all the foregoing—belongs the so-called "Temple" fresco* (see coloured plate II.) which has given us a better idea of the Mycenæan Order than anything else that was found (see also fig. 3). We see in this fresco what appears to be a miniature representation of a temple front, constructed chiefly of wood, with wooden painted columns. There appears to be stonework in the entablatures, and in the podium of the central portion; while the stylobate appears to be of large gypsum blocks, such as were found in the west wall of the palace. The ornamental "triglyph" feature under the central columns may be of alabaster; it will be more fully discussed in a following section (the "triglyph" motive).

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* For the publication of two of these, see the forthcoming number of the *Annual of the British School at Athens*, Vol. VIII. (Macmillan & Co.)

Turning to the Order, it is noticeable that the capital in No. I. (like that above the Lion Gate at Mycenæ) † strongly resembles an inverted attic-base. The capitals in Nos. II. and III. both resemble what has always been regarded as the standard example of a Mycenæan capital—that originally in front of the Treasury of Atreus, at Mycenæ ‡; but No. III. is the most distinctively Knossian in design, judging from various stone lamps that have been found. It was upon this example that the restoration of the columns in the Throne-Room at Knossos was based. The shaft of No. II. column, being complete to its base, is the most useful of the three examples for ascertaining the height in diameters; and it is interesting to note that the Mycenæan column is more attenuated than the Greek Doric, though the capital (which varies considerably) is higher in proportion.

The colours are interesting, and may be conventional, but for the shafts, at least, seem to be appropriate: the black suggesting old and seasoned wood, and the orange of the central columns resembling the usual yellow colour of wood in fresco.

The wooden posts in the fresco are interesting, as showing another constructive detail which has been made decorative; as there can be little doubt that the black pieces recurring at intervals represent the ends of mortised cross-beams socketed into the posts. The same principle has been found in the palace construction, in large gypsum corner-blocks having grooves or mortises into which the rubble wall gets a firm hold.

SOME PROBABLE RESTORATIONS OF THE PALACE—BASED CHIEFLY ON THE MINIATURE FRESCO.

Fig. 25 shows an elevation of the west wall of the palace at its junction with the "procession" corridor, with a suggested restoration of the upper wall. This is one of the most interesting parts of the palace, as it shows three different methods of finishing a wall-surface, placed side by side.

There is much probability in all that has been shown new. In the outer (left-hand) section the base is represented by large gypsum blocks standing on a projecting base-course; in the central section by an imitation marble skirting in squares, with a plain band over, all in plaster; in the inner (right-hand) section there is no base, except the border at the floor-line of the large picture-frescoes over.

The probable position of the upper floor at this point is made to appear in the decoration, and is represented on the left of the drawing by a band of recurring rosettes, or decorated beam-ends. This line might also form the top-finish of the lower motive of the right-hand section (life-size figures in procession); but would allow too little room for the large bull-fresco of the central section, if carried across. So that an upper line has been suggested at this point, forming also a line of window-sill on the left. Some vertical constructive decoration is shown above and below the band of rosettes (*cf.* fig. 16).

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* Illustrated in colours and black and white, and fully described by Dr. Arthur J. Evans in his "Mycenæan Tree and Pillar Cult" (*Journal of Hellenic Studies*, xx. 1900).

† See Perrot et Chipiez. *L'Art*, etc., T. vi., pl. xiv.

‡ *Ibid.* Pl. vi, and pp. 523 *et seq.*, 630, 631.

Fig. 26 shows a restored section of the Light Well and the "Hall of Double Axes," on the east slope. The stonework of the upper wall exists, but has slightly given way at this point, owing to the destruction of the woodwork beneath. There can be no doubt that the lower wall shown was occupied by a window; the evidence being very clear. The existence and width of the band above the lintel is also quite clear, though the rosettes are problematical.* The beginning of the decoration of the hall itself is shown on the right, and a band of running spirals has been assumed over the main horizontal line, the height of which is fixed. The gypsum slabs below have been partially restored, and a column has been shown, standing on one of the existing gypsum bases. The height of this column can be nearly ascertained from our knowledge of the level of the upper floor.

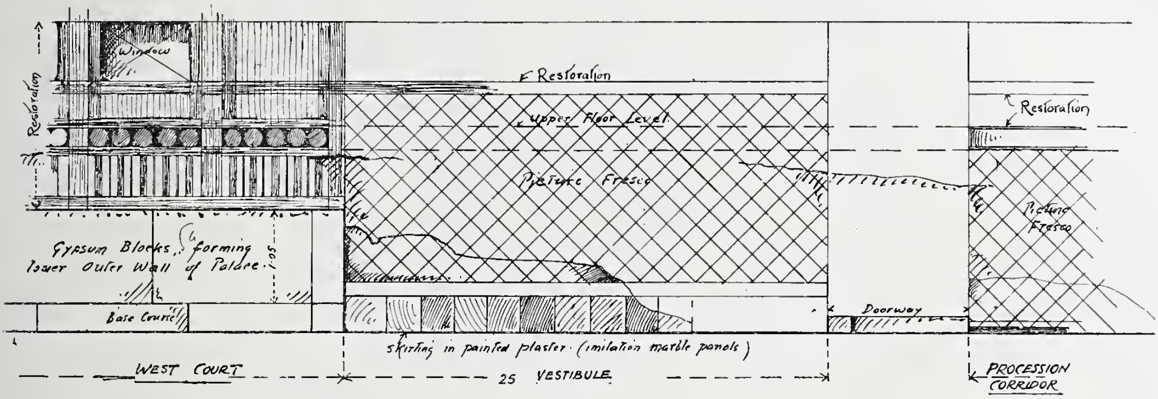

FIG. 25.

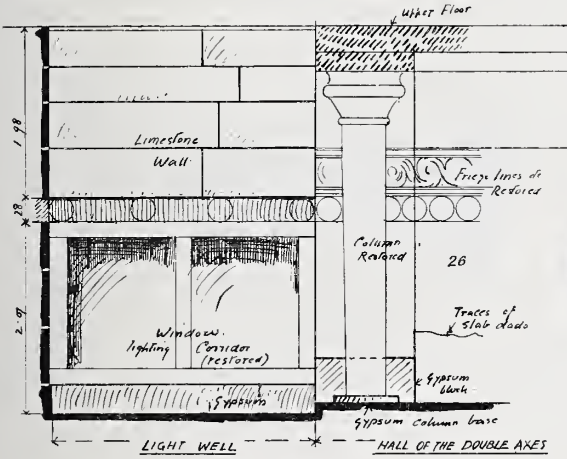

FIG. 26.

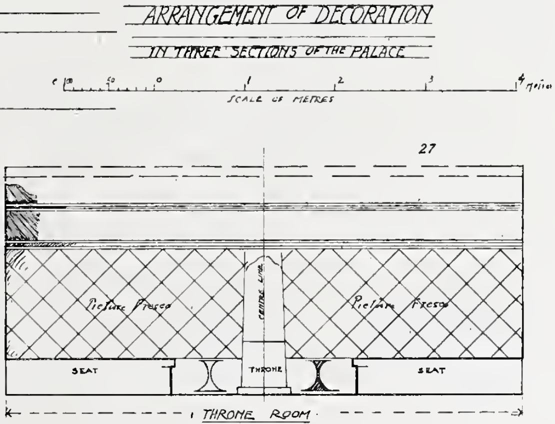

FIG. 27.

Fig. 27 shows nothing that has not been clearly ascertained, but it will serve to show the proportions of the north wall of the Throne-Room. The throne is in the centre; on each side the best part of the wall is occupied by the remains of picture-fresco; above are the frieze lines in their correct positions, and below are seats in stone, with a deep skirting in plaster to make up their height where they do not exist.

In figs. 25 and 27 the parts of the wall occupied by picture fresco are shown by crossed lines.

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* See *Annual of the British School at Athens*, vii., "The Palace of Knossos," p. 112.

SECTION II.—ORNAMENT IN DETAIL.

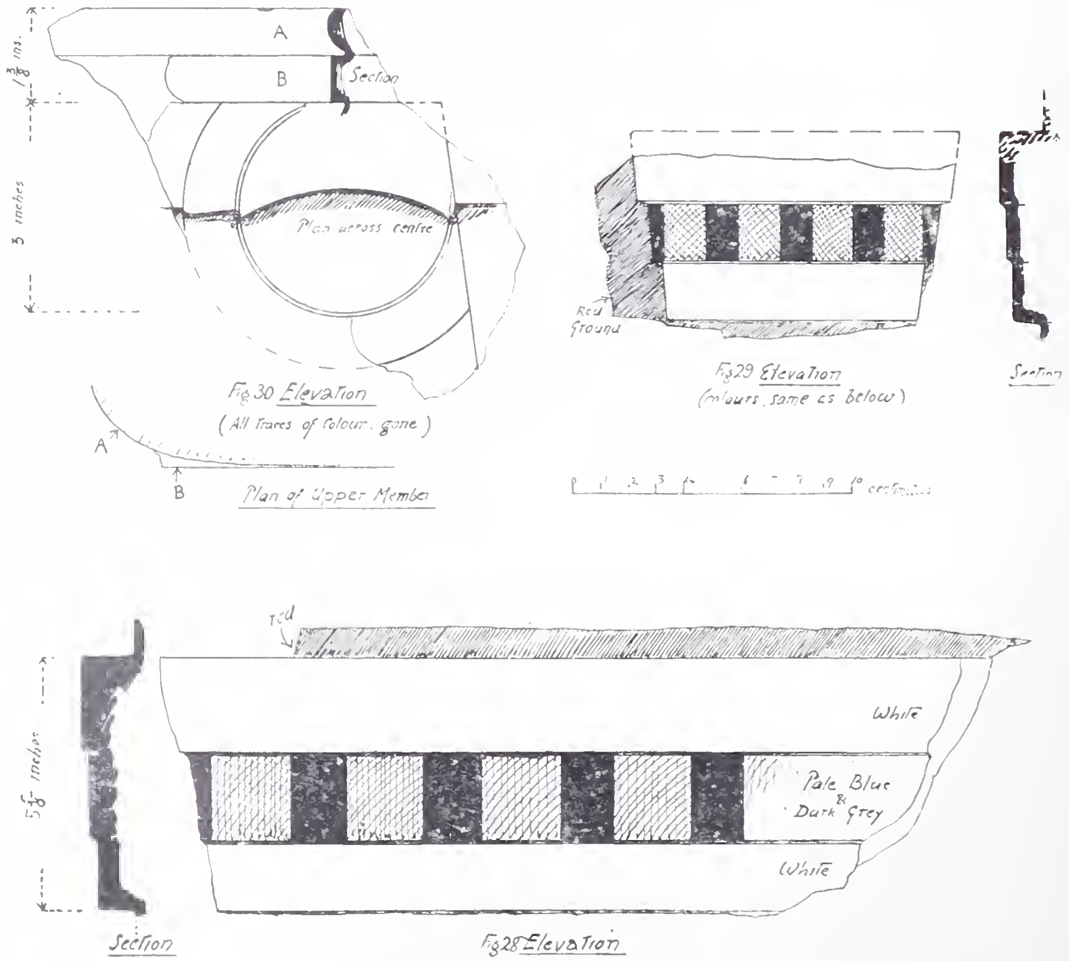
THE EARLIEST PALACE FRESCO.

In what appears to be the earliest fresco, if indeed it is not before the date of the existing palace, a simple scheme of colour is observed. Grey or black, red, white and yellow are found, but not blue.

Figs. 1 and 2 [p. 109] show borders in this style, and indicate the delicacy and boldness of the lines. From the evidence of the drawing alone, it seems probable that this fresco belongs to the (perhaps late) period of *Kamares* ware, which is distinctively Cretan, and the finest of all Mycenæan pottery. The lower part of each border is unfortunately incomplete, so that the finish of the motives is not clear. Two different schemes for the restoration of the border in fig. 2 are marked A and B.

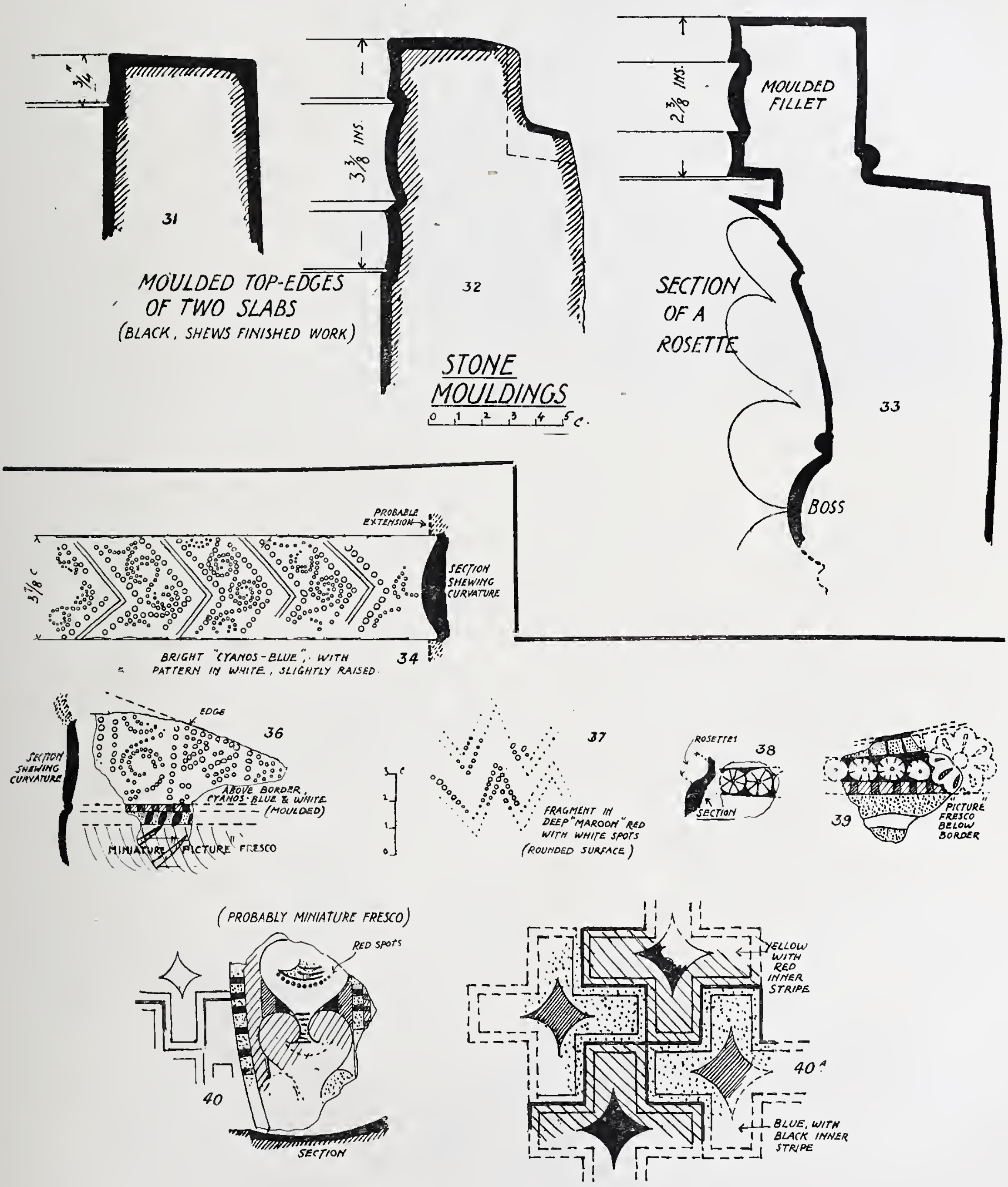
MOULDED WORK.

Fig. 28 shows the fragment of a moulded architrave or frieze, which suggests an important system of architectural decoration in this line. It obviously takes the place of a painted border, and probably represents an older and better method of finishing in connection



FIGS. 28, 29, 30.—DECORATED MOULDINGS IN STUCCO.

with a system of painted reliefs, which, in the grandest style of the palace, took the place of flat painted decoration. Another fragment found, of a sphinx or griffin in relief, standing on a system of frieze-lines also in relief, proves this very clearly.


3/4"
31
MOULDED TOP-EDGES OF TWO SLABS
(BLACK, SHEWS FINISHED WORK)
3 3/8 INS.
32
STONE MOULDINGS
0 1 2 3 4 5 C.
2 3/8 INS.
MOULDED FILLET
SECTION OF A ROSETTE
33
BOSS
PROBABLE EXTENSION
3 7/8 C
SECTION SHEWING CURVATURE
BRIGHT "CYANOS-BLUE", WITH PATTERN IN WHITE, SLIGHTLY RAISED
34
EDGE
36
SECTION SHEWING CURVATURE
ABOVE BORDER, CYANOS-BLUE & WHITE (MOULDED)
MINIATURE "PICTURE" FRESCO
0 1 2 3 C
37
FRAGMENT IN DEEP "MAROON" RED WITH WHITE SPOTS
(ROUNDED SURFACE)
ROSETTES
38
SECTION
39
"PICTURE" FRESCO BELOW BORDER
(PROBABLY MINIATURE FRESCO)
RED SPOTS
40
SECTION
YELLOW WITH RED INNER STRIPE
40 A
BLUE, WITH BLACK INNER STRIPE

SIX EXAMPLES FROM THE MINIATURE FRESCO

FIGS. 31 TO 40A.

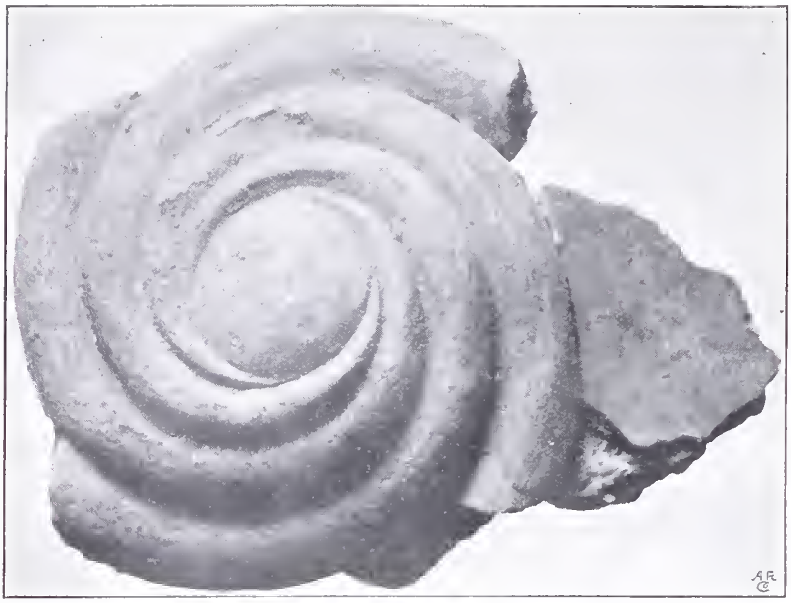


FIG. 41.—A SPIRAL FRAGMENT.

Fig. 29 resembles the foregoing, but from its shortness becomes a "respond," rather than a band.

Fig. 30, an interesting detail, is however so fragmentary that its meaning is obscure. It distantly suggests the classic "egg-and-dart" enrichment; but it might just as easily be the corner-piece of a large continuous pattern.

In connection with these mouldings, which belong to large-scale architectural decoration, should be mentioned the various stone mouldings which have been found, and which

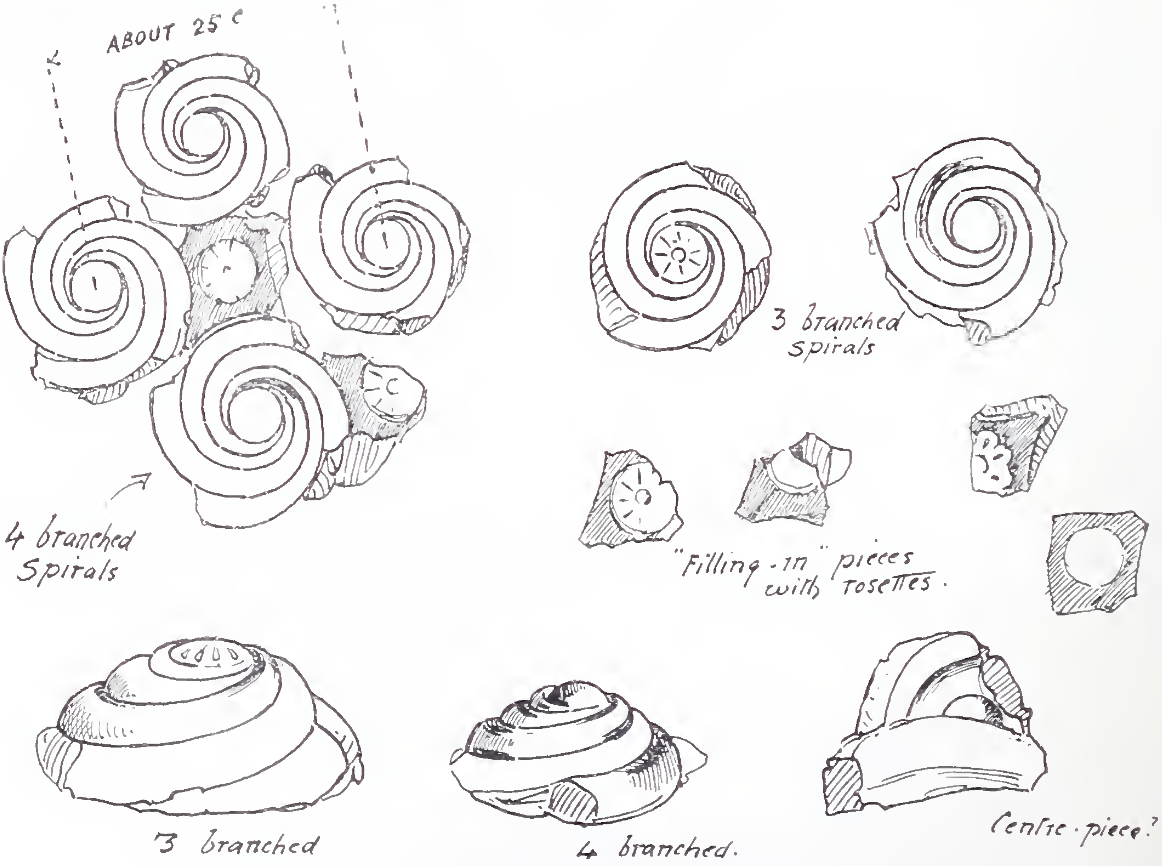


FIG. 42.—FRAGMENTS IN PLASTER RELIEF (PROBABLY PARTS OF A CEILING).

belong to the same (or perhaps a superior) class of work. A few sections are shown in figs. 31–33, which will serve to show the refinement of the lines.*

Of smaller mouldings, which perhaps helped to subdivide the walls into pictures, there are several in the "miniature" class. The most interesting form a group which shows spiral decoration in minute white spots on a brilliant blue ground. (See figs. 34 and 36.)

The connection shown on fig. 36 between geometric-design and picture-work is important. Fig. 36 evidently represents part of a moulding, perhaps the same as the centre-part of the stone moulding in fig. 33. Fig. 38 is a good example of the modelled work, which takes no account of detail, already mentioned.

A CEILING IN MODELLED PLASTER.

Very few of the plaster fragments found can be definitely put down as ceiling decoration. One highly important lot is, however, almost certain: a system of raised spirals in relief which formed a continuous pattern, the interstices being filled in with flat plaster, perhaps slightly hollowed.†

The coloured plate (No. I.) shows a probable restoration of a part of this ceiling; fig. 41 shows a photograph of one spiral, and fig. 42 sketches of all the existing fragments.

The design is of necessity subservient to certain rules. Some of the spirals have four and others three branches; it follows that each variety can only fit into certain places in the design. The chief puzzle is to work the spirals conveniently round the "quatrefoils" which recur at intervals.

It is by no means certain that the original form was exactly as here restored, but some such continuous design forming a rich scheme of decoration must have existed. Such a form of decoration also is obviously more suitable for a ceiling than for a wall.

It is probable that plaster ceilings were the rule and not the exception at Knossos.

VARIOUS SPIRAL FORMS.

From the many forms of geometric detail employed, one must select certain typical ones, and investigate their constructive meaning and scope. The most important is *the spiral*, which, in a variety of ways, is common to all Mycenæan art, and is treated at Knossos in a most masterly manner. It is used as a running frieze ornament (see figs. 43 and 44), and in similar, but smaller, forms in the details of borders (see figs. 50 to 57). Also, as a continuous pattern, which may have covered a large field or have been limited to a comparatively narrow strip with borders on each side, as in figs. 45 and 46. In these two figures the same design is depicted. The latter shows the fragments as found, with what appears to be an interesting break in the main design, round a black triangular motive. The former shows a restoration of the pattern, but limited to a narrow strip, since it is certain that the borders at top and bottom must have been as shown, whatever may have been between.

A more complicated form—perhaps a development of the last, as it was found in the same deposit—is shown in figs. 47 and 48, in which dots alternate with lines to form spiral branches.

Fig. 49 shows what is probably part of a very large spiral motive.‡ All these examples form full-size palace decoration.

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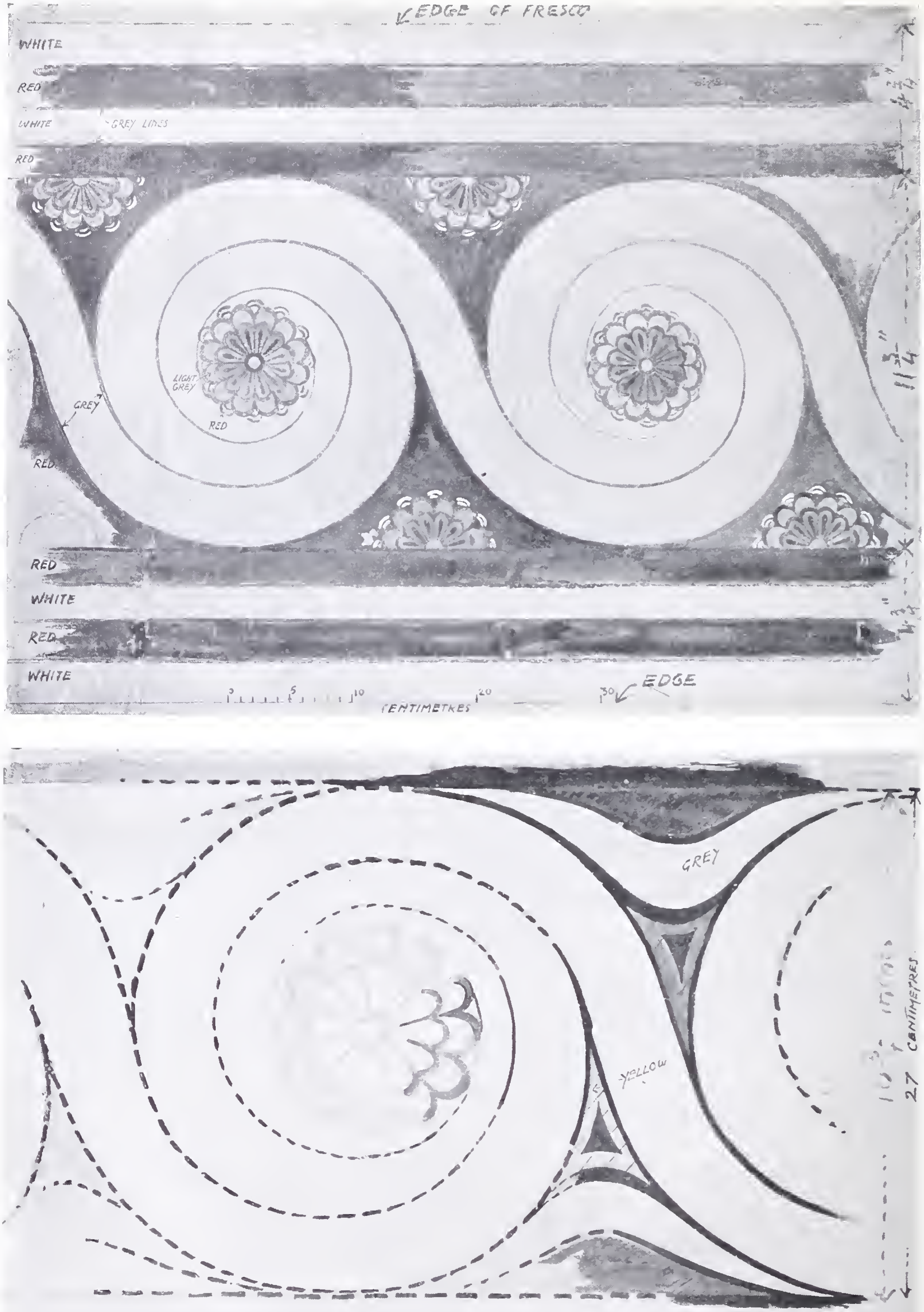
* Concerning fig. 33, *cf.* the moulding below the frieze of a temple at Selinunte in Sicily. (Perrot et Chipiez, *L'Art*, etc., pp. 709 and 721.)

† For an Egyptian parallel to this design see an Eighteenth Dynasty ceiling pattern in Wilkinson's *Manners and Customs of the Ancient Egyptians*, Vol. I., pl. viii.

‡ *Cf.* Schliemann's *Tiryns*, Plate IX.



FIGS. 43 AND 44.—FRIEZES OF SPIRALS AND ROSETTES.

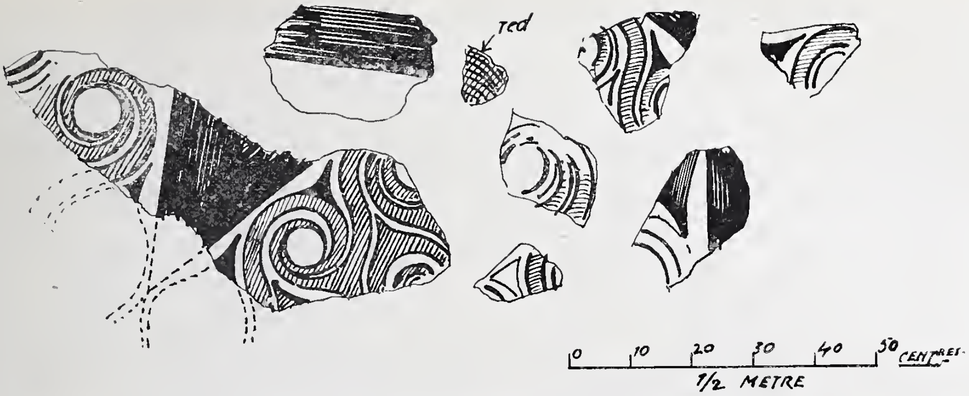


FIG. 46.—FRAGMENTS IN PAINTED PLASTER (WALL DECORATION).

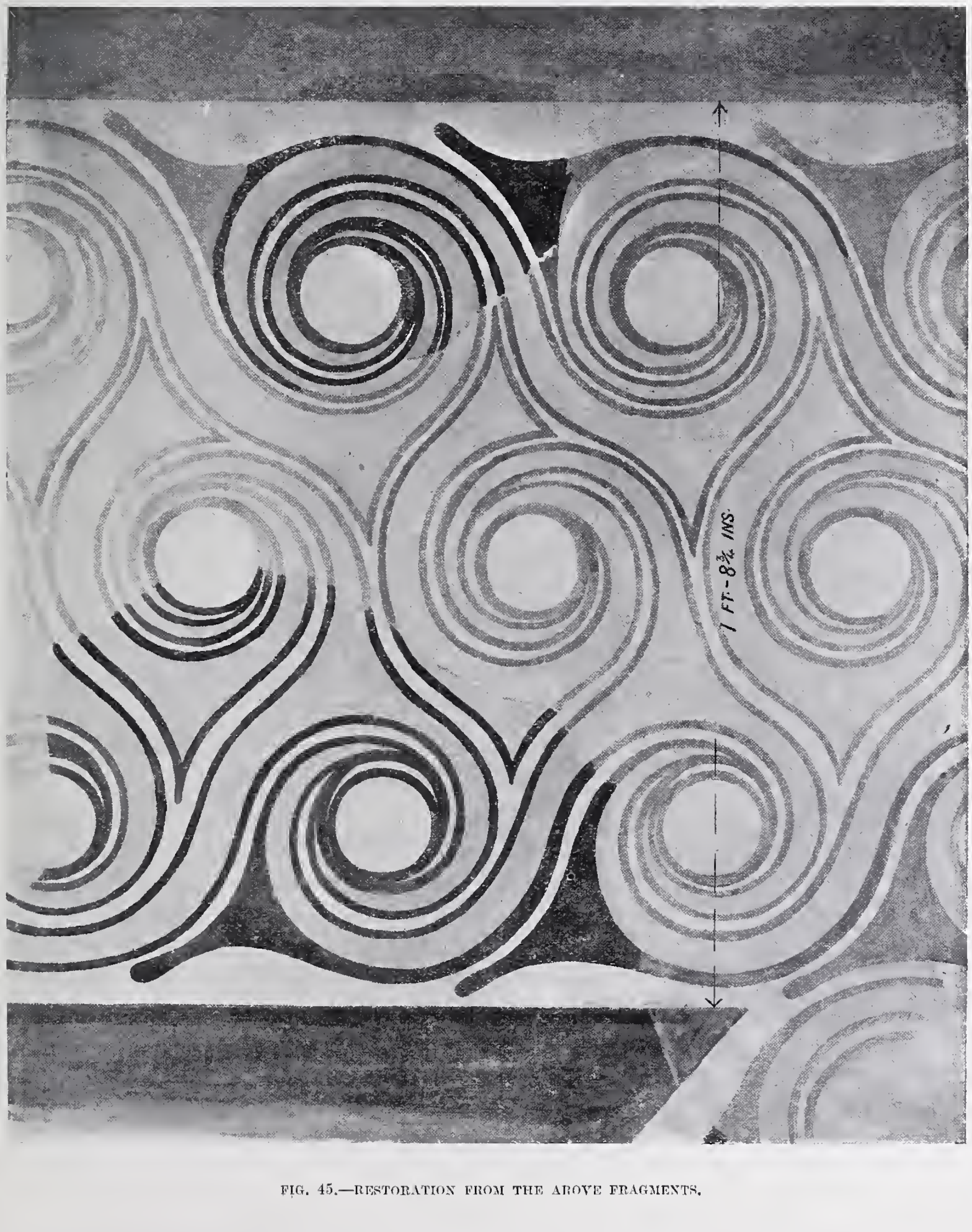


FIG. 45.—RESTORATION FROM THE ABOVE FRAGMENTS.

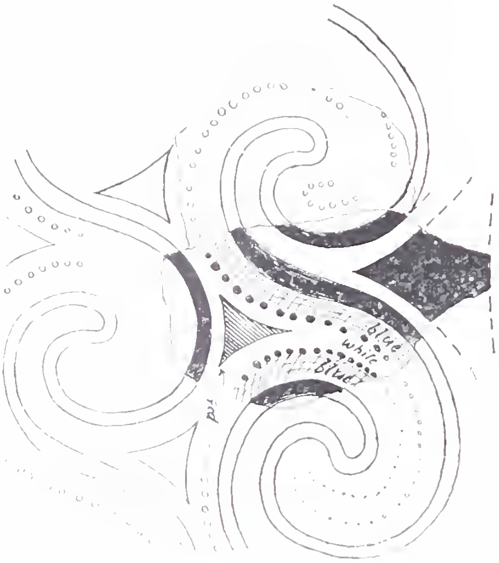


FIG. 47.

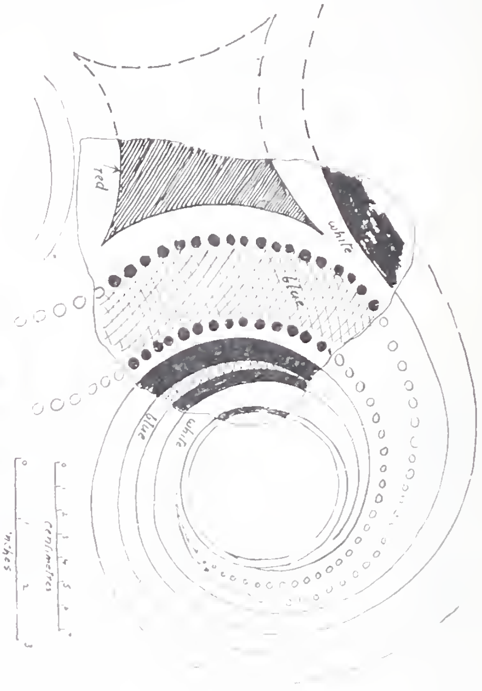


FIG. 48.

SPIRAL RUNNING PATTERNS.

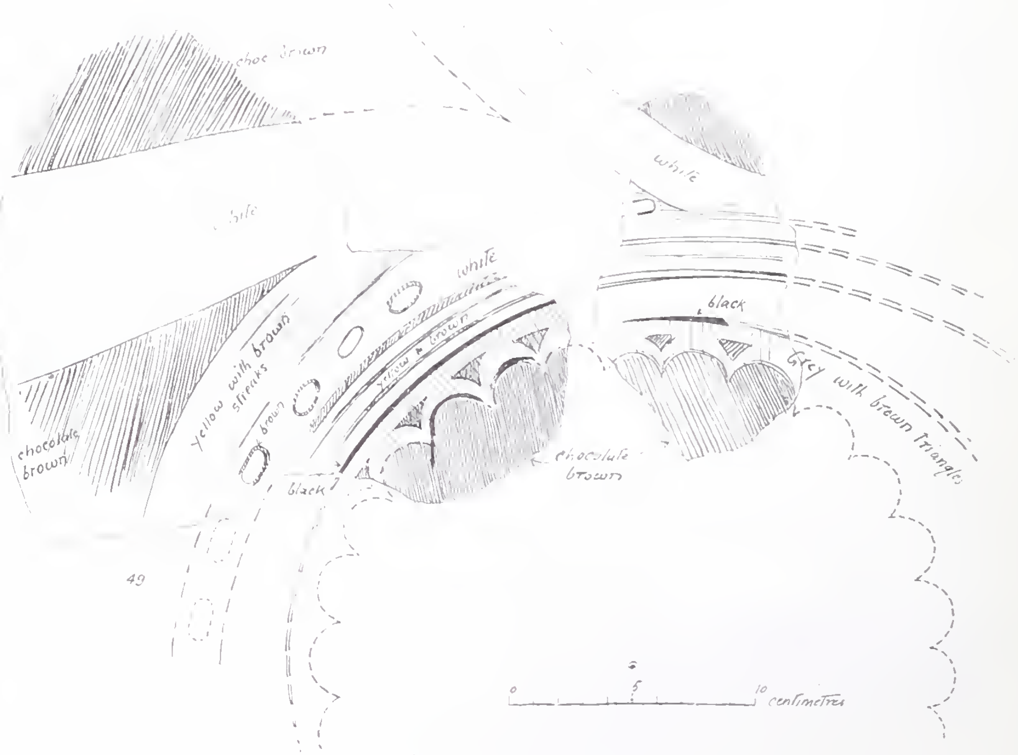
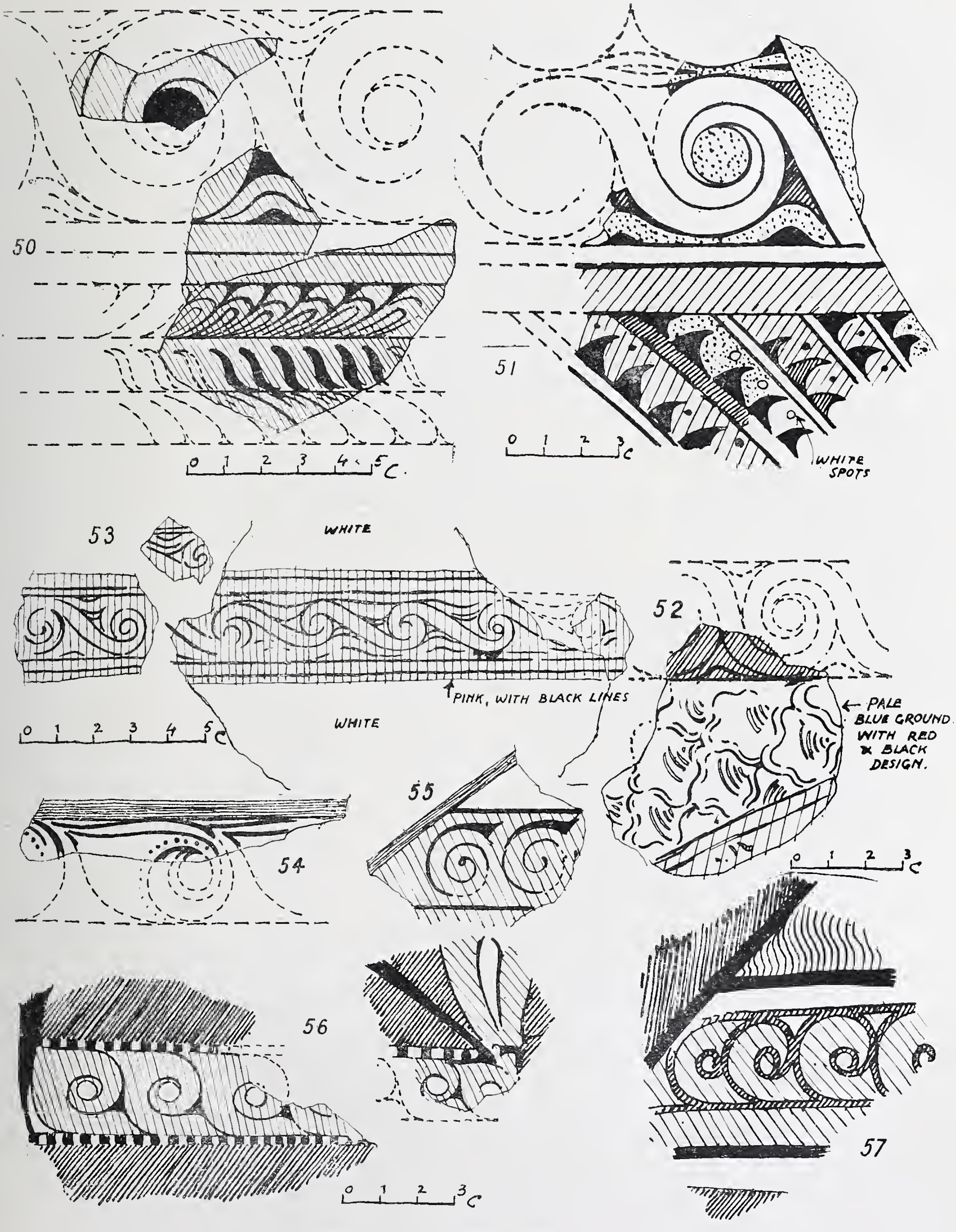


FIG. 49.—PROBABLE SPIRAL MOTIVE.



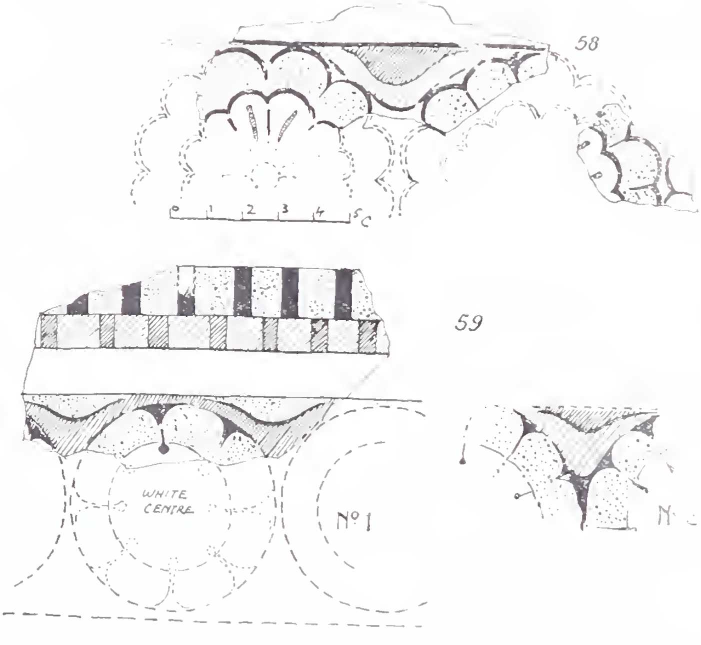
FIGS. 50 TO 57.—VARIOUS SMALL SPIRAL FORMS.

Reference has already been made to the spirals on the "miniature" moulded-frescoes (figs. 34 and 36) and to the modelled spiral ceiling. Smaller spiral patterns can be seen in figs. 50–57, mostly used in combination with other forms of ornament. Fig. 50, carefully drawn in black and yellow, is probably the dado, or some such border, of a small room on the east slope. Figs. 51 and 52 suggest fields of continuous pattern, in small scale ornament. Fig. 53 is a refined example of a small pink border, isolated on a white ground. The form shown on fig. 54 is apparently the same as that which decorates the palmettes of the alabaster "triglyphs" at Tiryns (see note § to p. 126).

It should be noted, concerning Mycenæan spiral forms generally,* that, as a rule, they are not true spirals in the sense that the ammonite shell and the Greek Ionic volute are. The evolution of a curved line from a central eye produces of necessity only one outlet, as in the above-mentioned cases.† Mycenæan spirals have nearly always two, three, or even four outlets or branches. This is very apparent in the spiral forms of the modelled ceiling, before mentioned. In these, imagine the central eye, having four pliable attachments in the shape of the spiral branches, to spin rapidly on a fixed centre; the result would be the complete spiral shown in fig. 41.

THE ROSETTE.

The rosette is another typical form of ornament, usually occurring in constant progression or at regular intervals in horizontal bands, a form of decoration that was probably suggested by the beam-ends appearing in the construction. The rosette also occurs in the eyes of the larger spirals, and very appropriately is used as a complement to spiral forms generally, either in half-form, as in fig. 43, or completely, as in Plate I. We know that the Knossians thoroughly understood the treatment of rosettes in relief, from the splendid fragments of stone carving which represent, evidently, a series of these forms.‡



FIGS. 58, 59.—SMALL ROSETTE-BANDS.

Fig. 61 represents part of what may be an enormous rosette, though it more probably belongs to the ornament which will be treated in the next section. Figs. 58 and 59 are borders in small-scale ornament, precisely the same scale of work as fig. 50. They

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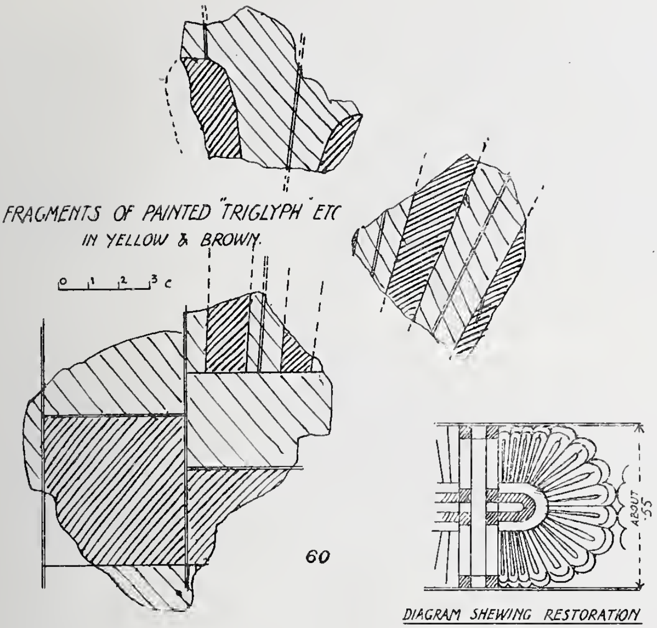
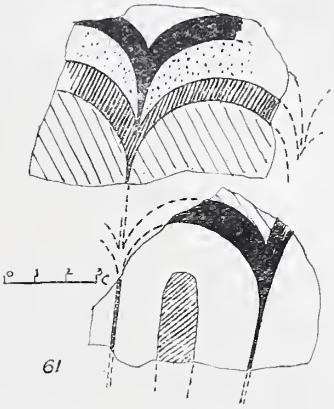
* See Perrot et Chipiez, *L'Art*, &c., pp. 540 *et seq.* and Plate XVII. Also Schliemann's *Excavations* (Schuchhardt—trans. by E. Sellers), p. 171. Also Schliemann's *Tiryns*, Plates VIII., IX.

† In complicated Greek Ionic examples, such as the north portico of the Erechtheum at Athens, the initial form is the same, only the branch has been doubled to get more richness of effect. No doubt, as Mr. Penrose has said, all *simple* Mycenæan spirals were constructed on the principle of the involute scroll, theoretically; but there can also be no doubt that the Knossians could draw more beautiful spirals borrowed from shell-forms. (See the learned disquisition of Mr. Penrose on the Ionic volute, JOURNAL R.I.B.A., Vol. X., 3rd series, 1902, p. 21.)

‡ Found in 1900 in the western part of the palace. They have not yet been published.


FRAGMENTS OF PAINTED "TRIGLYPH" ETC
IN YELLOW & BROWN.
0 1 2 3 c
ABOUT ·55
DIAGRAM SHEWING RESTORATION

60



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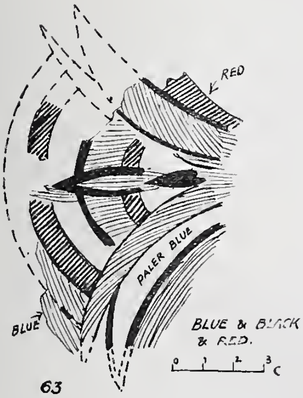
FRAGMENTS OF ROSETTE, OR "TRIGLYPH" ORNAMENT.



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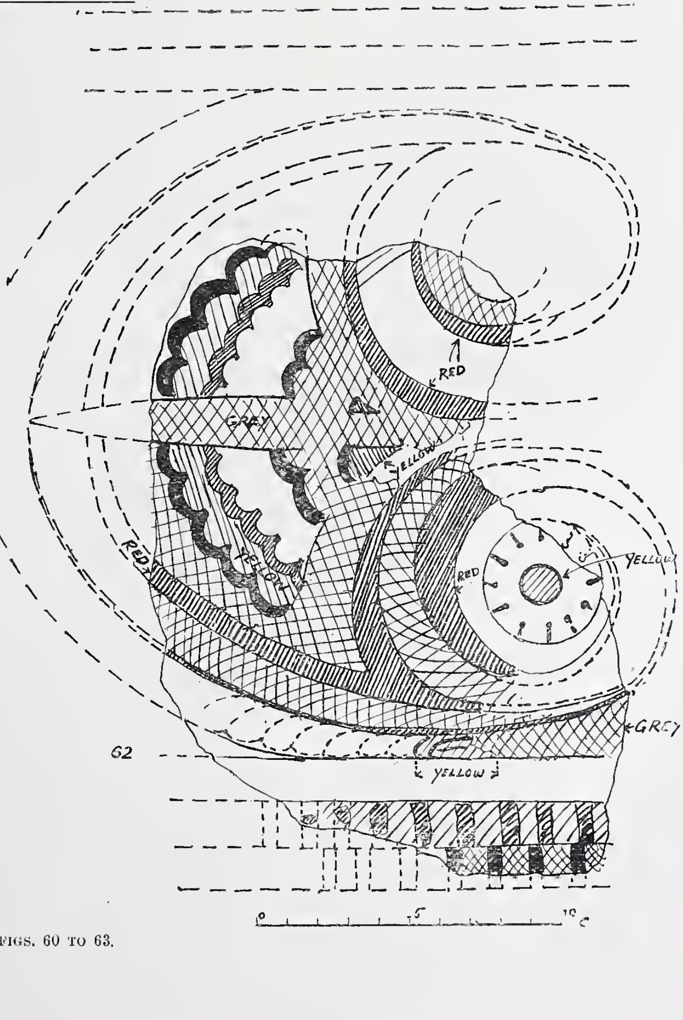

62

FIGS. 60 TO 63.

may be taken as typical types of (1) the "flower" rosette represented by fig. 58, which has two series of petals, having distinctly rounded outer fringes; (2) the "beam-end" rosette (fig. 59), which does not lose its distinct circular form, and has only a suggestion of lines running to the centre. Of these two kinds, the first is the purely ornamental form, used in the eyes of spirals, &c. (see fig. 43, &c.); the second is the more constructive, and occurs constantly in the "miniature" fresco * (see figs. 15, 16, 17, p. 113).

Other smaller rosettes may be seen in figs. 38 and 39 [p. 117]. The former is an interesting specimen of small moulded work. The latter, on the flat, is quite as interesting; a tantalising fragment which shows a curious border and the beginning of some picture-work.

THE "TRIGLYPH" MOTIVE.

We now come to a combination which forms the most distinctive architectural ornament of the Mycenæans; and which here chiefly forms the subject of a coloured plate (Plate II.). It consists of a succession of long elliptical forms, placed side by side in a horizontal line; each ellipse divided by a vertical member in the centre. The half-ellipses that are thus formed are decorated like rosettes (or palmettes), by petal-like forms springing from a core. The vertical members are decorated in a variety of ways.

The special interest of this motive consists in the fact that it has been called the prototype of the Doric triglyph.† It has been found in the following forms: (1) at Mycenæ, in front of the "Treasury of Atreus," on carved stone bands of pure ornament (26 c. and 17·5 c. in width); forming a combination with other decorated stone bands ‡; (2) at Tiryns, as a built-up combination of alabaster slabs, decorated with blue glass; found on the floor as a skirting, but, probably, originally forming a frieze.§ This example is the largest extant (55 c., inside width); (3) at Knossos, as follows: *a*, a carved stone band, resembling those at Mycenæ, but in better preservation, and of finer workmanship (see note to p. 112); *b*, various plaster fragments, showing the motive as large and small decoration (see Plate II. and fig. 60); *c*, in the "Temple" fresco, where its *raison d'être* may best of all be studied (see Plate II., fig. 1).

Besides the above forms, which represent architectural decoration, the motive has been found on a small ivory plaque at Mycenæ, and as a small ornament in glass-paste at Menidi, in Attica.‖

The last example is important; it represents the motive as an oblong, with the vertical member in the centre, and a half ellipse on each side; it entirely altered Dr. Dörpfeld's view of the construction of the motive. Discussing the Tiryns example he says: "There are indeed sundry external resemblances between this frieze and the triglyph of a Doric edifice, but the form of the ornament does not allow us to regard the frieze of Tiryns as a proto-Doric triglyph." ¶

In the "Temple" fresco this motive is shown as a panel, with the vertical member in the centre; as in the Menidi example. But from the point of view of *construction*, the Knossian fresco is illuminating; not only is the vertical member evidently of wood, but the entire panel framed in the same material (see fig. 1, Plate II.), so that the vertical members seem to become the determinants of the motive; and the half-ellipses a filling-in of pure ornament.

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[*] *Cf.* Perrot et Chipiez, *L'Art*, &c., pp. 535–540. Also Schliemann's *Tiryns*, Plate IX.

[†] Perrot et Chipiez, *L'Art*, &c., pp. 710 *et seq.* A. J. Evans, "Mycenæan Tree and Pillar Cult" (*J. H. S.* xx. 1900), pp. 194 *et seq.*

[‡] See Perrot et Chipiez, *L'Art*, &c. T., vi., p. 547 and Pl. IV.

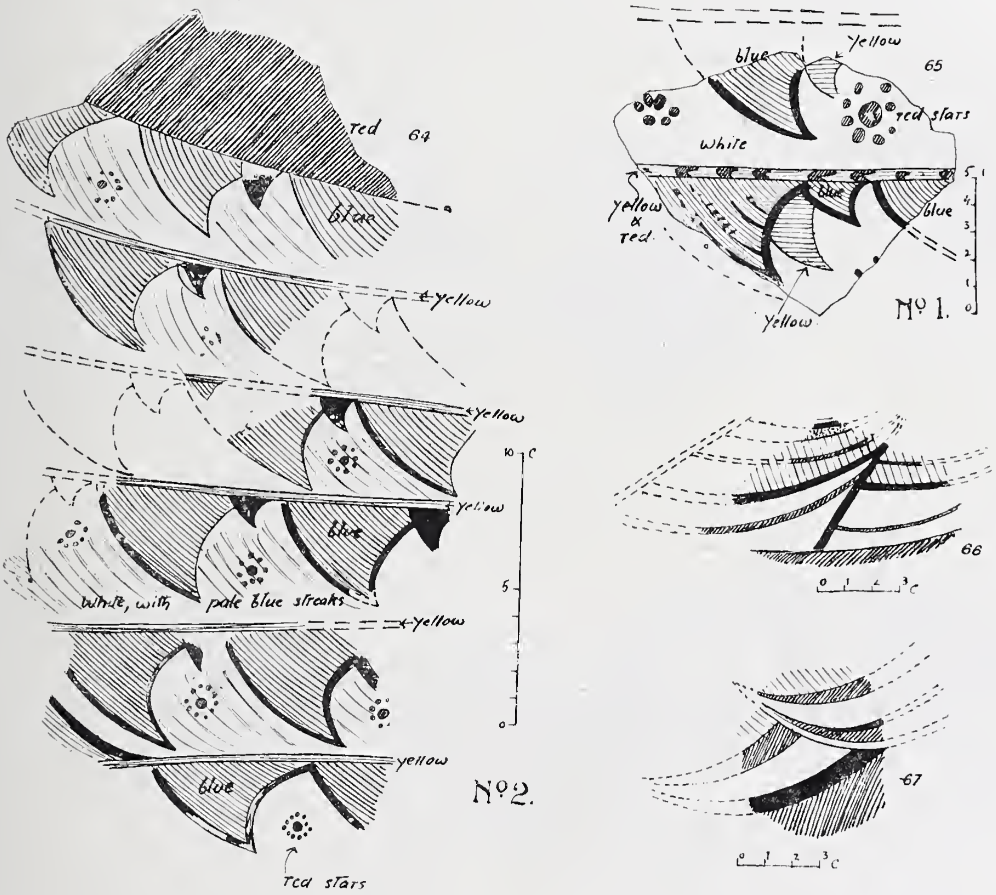
[§] See Dörpfeld in Schliemann's *Tiryns*, pp. 284 *et seq.* and Plate IV.

[‖] *Ibid.*

[¶] *Ibid.*

All this rests on the supposition that the parts coloured yellow in the "Temple" fresco invariably represent woodwork. Granted that this is the case, we are brought to another point, namely, that this motive was originally used *in places framed for strength, requiring ornament*; and if we turn to the entablature of the Temple (see fig. 3, p. 109) we see that there, where no weight exists above, the decoration is suited to the occasion, and consists of chequer-work; perhaps representing ornamental masonry.

It may also be questioned if architectural decoration should be judged from the standpoint of similar motives on tiny ornaments, and I think that from the evidence at Knossos it does indeed appear probable that this motive might have formed a basis for the Doric triglyph.* The stone bands at Knossos and Mycenæ which represent the ornament are out of court in the argument; they are made up of long pieces, and show the oft-repeated transition from constructive wood to decorative stone.



FIGS. 64 TO 67.—VARIETIES OF TOOTH-ORNAMENT.

To come to a detailed consideration of the various forms shown on Plate II., we note first a general resemblance of colour in them all. Fig. 3 is the most complete specimen—it is strongly resembled by fig. 5—which, however, has yellow instead of white in the inner petals of the palmette. Fig. 2 represents a variation; but apparently belongs to this style of ornament. Fig. 4 is, however, the most curious example; the palmettes in this case being superseded by a motive which suggests a wheel, a sun, or a star. The variation of ornament on the vertical member is also noticeable. If the fragment above the triglyph in fig. 5 really represents a "horn of consecration," as suggested in the drawing, it would show that the "triglyph" motive was used there, either on a parapet or coping, or on a podium, as in the "Temple" fresco (fig. 1, Pl. II.). The example on fig. 5, when complete, would approximate in size to the stone examples, and therefore almost certainly formed part of the main palace decoration. Figs. 2, 3, and 4 also probably formed palace decoration of a smaller sort.

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* Phæstos, the other great Cretan site, has what one might call a duplicated triglyph on the breastwork of stone seats, which resemble those at Knossos. Thus, the broad, simple triglyph motive is decorated with vertical strips in relief, which are plain and grooved alternately. See L. Pernier, *Scavi della Missione Italiana a Phaestos. Rapporto Preliminare* (Roma. Acad. Lincei. 1902).

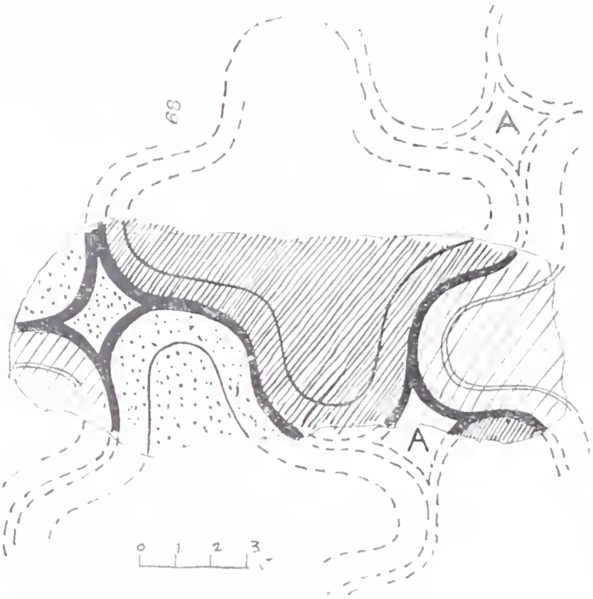

FIG. 68.

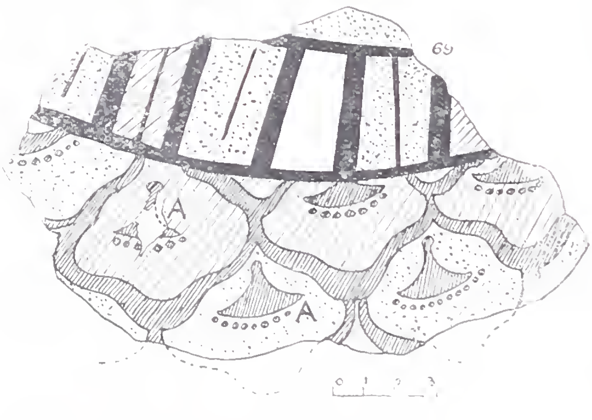

FIG. 69.

Fig. 60 shows some fragments which apparently belong to this ornament, though it is difficult to arrive at a definite size for it. A suggested restoration has been appended which shows a probable inside width of 55 centimetres. This example would thus have been the same size as the Tiryns one in alabaster.

Reference must also be made to fig. 61, which shows three series of petals in the palmettes. It will be seen how closely the palmette part of the "triglyph" motive resembles the rosette.

Two interesting fragments may conveniently be taken here as suggesting in some degree the form of ornament just mentioned. They are shown in figs. 62 and 63. The "sword-point" detail in both at once suggests the large ceiling ornament of the Orchomenos tomb, in Bœotia,[*] while the character of the widening flower is very distinctly Egyptian,[†] especially in the more naturalistic example given here (fig. 63).

These fragments may well have formed part of an important continuous decoration of wall or ceiling.

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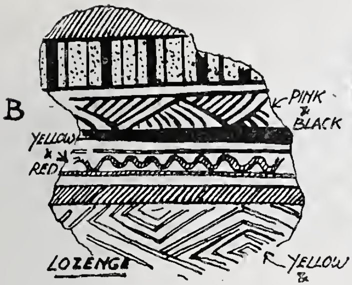
[*] *Exploration of the Bœotian Orchomenus*, by H. Schliemann. *Journal of Hellenic Studies*, vol. ii. pp. 146, *et seq.* and Pl. XII. and XIII. Also see Perrot et Chipiez, *L'Art*, &c., pp. 504, 543–4. And *cf.* Schliemann's *Tiryns*, Plate V.

[†] Certain tombs at Thebes, now being excavated by Mr. Percy Newbery, throw much interesting light on Mycenæan and Egyptian relations. In one there is a ceiling in painted plaster, certainly not later than the twelfth century B.C., which distinctly resembles the one at Orchomenos. The palace of Ahmenhotep III. at Thebes, now being re-excavated by Mr. Newbery, also shows prospect of being interesting from the Knossian standpoint.



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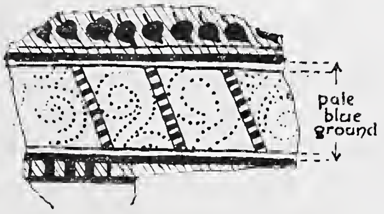

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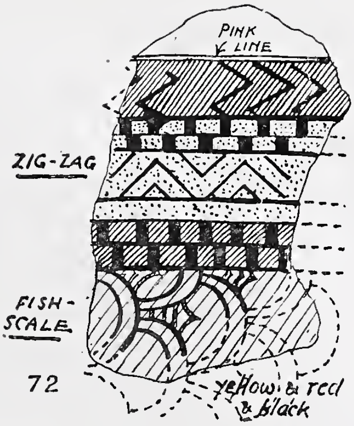

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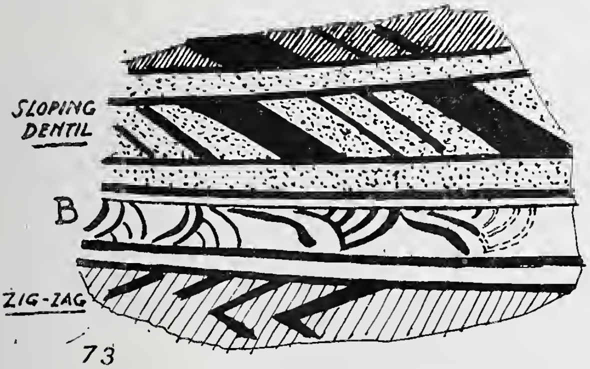

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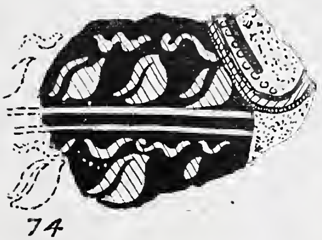

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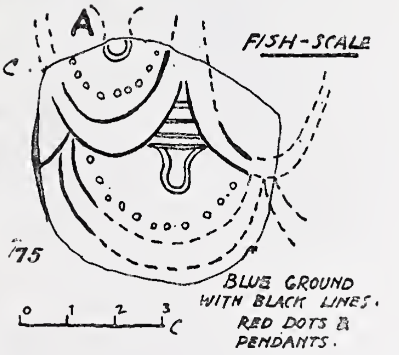

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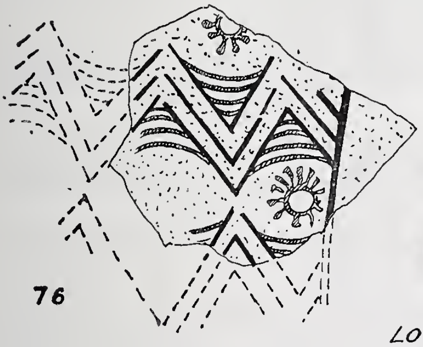

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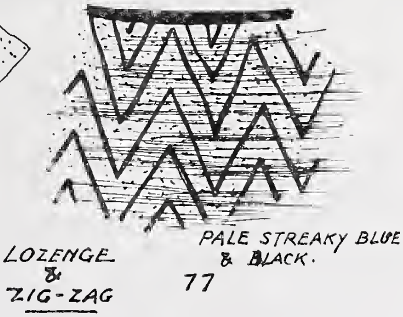

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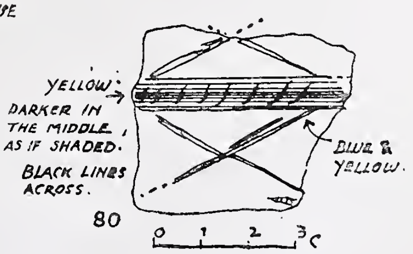

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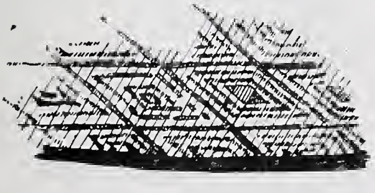

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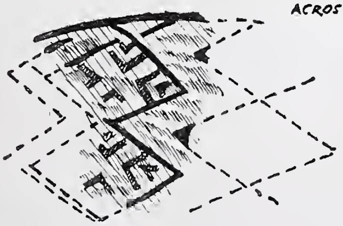

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FIGS. 70 TO 80.—VARIOUS DETAILS.

VARIOUS SMALLER FORMS OF ORNAMENT.

There remain to be treated certain other types of ornament which occur in borders and decorated surfaces. Many of these are familiar to the student of Mycenæan art, especially on pottery. In stucco they are often puzzling: (1) in the haphazard way in which different motives are joined, and in the apparent difference of scale in adjoining motives; (2) in the oddity of angle into which some of the ornament works, as judged from the sloping character of its lines (see figs. 46, 51, 52).

The existence of these features makes it all the more regrettable that no large surface of pure ornament was found intact.

The *dentil* motive, already alluded to, is a very common ornament in small-scale borders. Fig. 5 on coloured Plate II. shows one of its largest uses (*cf.* scale); and fig. 3 of the same also shows it in colour.

Another simple example can be seen in fig. 59. Figs. 71 and 72 show it to smaller scale, and figs. 36, 39 and 40 very small in connection with miniature fresco. Fig. 6 on coloured Plate II. shows the smallest dentil-work that has been found.

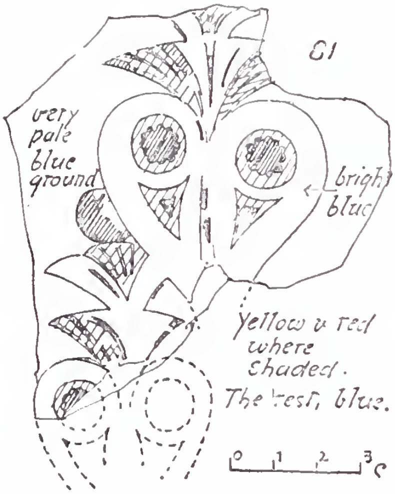

FIG. 51.

Another form of dentil is shown in fig. 70, but more completely in the architectural miniature fresco (figs. 16 and 17). This form is obviously borrowed from wood-construction, as probably are all the forms.

The *tooth* ornament, represented in brilliant blue, would be most appropriate as a robe decoration (see figs. 64 and 65), and was found as such (in a subsidiary form) on a figure in the "Procession" fresco.

Fig. 51 shows it in connection with the spiral, suggesting a similar motive found at Tiryns, which is thought to be part of a wing.*

Figs. 66 and 67 show two examples which may be regarded as varieties of this ornament. Fig. 66 suggests the stretching of cloth.

A very pretty form of repeating ornament (see fig. 68), which is peculiarly Mycenæan, has also been found as robe decoration in the "Cup-bearer" fresco.

A variation of the same motive is shown in fig. 40 (in connection with miniature fresco), which also shows an isolated piece which may belong to a larger motive. The squared form in fig. 40A abolishes the little vacancies, marked A, in the design of fig. 68; but curiously enough recovers them again in the centre of each cross.† It would be interesting to know which was the older form—the squared or the rounded.

The *fish-scale* ornament is found in a variety of forms, from the simple, fig. 75, to the more complicated, figs. 52 and 69. As found at Tiryns,‡ this ornament suggests overlapping cloth fringes, while the part marked A in fig. 75 resembles a pendant in metal.

The *lozenge* is also a common form of ornament. It is shown as chequer-work in figs. 70 and 78.

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* See Schliemann's *Tiryns*, pp. 299, *et seq.*, and Pl. VI.–VII.

† A form that has also been found as inlaid crystal in the "draught-board." See *Annual of the British School at Athens*, vii. 1900–01. Ill. p. 79.

‡ Schliemann's *Tiryns*, Pl. XI.

The filling-in of the pattern is probably suggested by the graining of wood in section. This ornament is often formed by a combination of *zigzags*, as in figs. 76 and 79.

For the zigzag form proper see figs. 72 and 77.

The borders shown in figs. 70, 71 and 72 have a variety of ornament. A form of tooth-ornament is shown at B in fig. 70. Fig. 71 shows a border with sloping motive, as in the *sloping dentil* of fig. 73. Fig. 73 is hardly a border, but it shows at B a tooth-ornament resembling that of fig. 70.

The meaning of fig. 74 is obscure; the black ground points to early work, while the yellow ornamentation is a common motive on pottery. The leaf-work at top of fig. 71 is also a pottery motive.

Fig. 80 is curious, as showing what appears to be shading by colour-gradation in the yellow horizontal band. The crossed lines in the figure, resembling lattice-work, are not often met with in fresco.

Two forms of ornament, which resemble one another, and which are completely Mycenæan, are shown in fig. 40 and fig. 81. The example in fig. 40 forms the decoration of a moulding. The same motive was found at Tiryns.* Fig. 81 is more complicated, but was also found in somewhat similar form at Tiryns,† where it appears to be a pendant of obscure meaning. The Knossian example is brilliantly coloured in blue and red and yellow, and is probably a detail (perhaps held by a figure) in some important picture fresco.

The isolated fragment shown in fig. 6 of the coloured Plate II. evidently belongs to the smallest scale of work in the Palace. It is an interesting fragment, but is unfortunately incomplete, to the extent that we do not know if the oval motive is repeated, or gives place to a round. The latter idea, giving shields and double-axes alternately, is suggested by Dr. Evans, and seems to be borne out by the drawing—if one can judge from so small a scale. The sloping yellow part below the border even suggests that this fragment might represent the finial of a pediment; the double-axe having a votive or triumphant look.

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* Schliemann's *Tiryns*, Pl. VI., IX., XII.

† *Ibid.*

9, Conduit Street, London, W., 20*th Dec.* 1902.

CHRONICLE.

Dr. Evans's Paper and its Illustrations.

The illustrations which accompanied Dr. Evans's description of his remarkable discoveries in Crete were very numerous and of surpassing interest. Many were drawings, the work of Mr. Theodore Fyfe; others photographs which, projected on to the screen, transported one to the scene of the excavations, and to any part or detail of the Palace Dr. Evans wished his audience particularly to inspect. Two lanterns were employed, so as to allow plans, sections, and details to be seen side by side and explained together.

Before the meeting closed, Dr. Evans made the interesting announcement that the President and Council of the Royal Academy had kindly consented to allow the exhibition of the drawings, plans, and photographs, and some specimens illustrating the work, as part of the Winter Exhibition of the Academy. A room had been set apart, and it was hoped that the Exhibition would last through the month of January, so that those who wished would have an opportunity of inspecting the details at their leisure.

Dr. Evans's Paper and Mr. Fyfe's description of the painted plaster decoration, which followed, occupied the whole of the evening, and left no time for the usual discussion. The following remarks were made on the motion for the vote of thanks:—

Mr. George A. Macmillan (*Treasurer Cretan Exploration Fund*) said that the very pleasant duty had been assigned to him of asking the meeting to return a very hearty vote of thanks to Dr. Evans for his exceedingly able and interesting Paper. No words of his were needed to recommend this vote of thanks, for it would scarcely have been possible to have had a Paper more interesting. In the course of conversation that evening the President had reminded him that the Institute concerned itself more with architecture than with archæology; but, on listening to Dr. Evans's statements, and seeing the admirable illustrations and the drawings by Mr. Fyfe, he was sure they would agree with him that the problems concerned were very largely architectural; and he could not help feeling that in the material which Dr. Evans had laid before them, there was a good deal left for architects as well as for archæologists to do. He could not help thinking that many architects might be disposed to try their hand at reconstructing some of the parts, or perhaps the whole, of this extraordinarily interesting building; and it was perhaps not vain to imagine that, if architects of the present day should be called upon to build a palace for a South African or some other millionaire, some hints might be taken from the magnificent building which had been outlined before them by Dr. Evans. As being largely concerned in the Cretan Exploration Fund, by whose aid Dr. Evans had carried out his work, he asked to be allowed to remind the meeting that there was yet another season's work before the explorers, and that their exchequer at the present moment was empty!

Mr. R. Phené Spiers [*F.*], F.S.A., said he seconded the vote of thanks with very great pleasure. He had had the advantage of listening to Dr. Evans last year when he read a Paper on the first portion of his exploration before the Architectural Association, and what struck him then occurred to him again on the present occasion, viz., that with this art as with that of the Egyptians the further back we go the purer and the finer seem the examples. It was well known that in the earlier Egyptian tombs the sculpture was of a far finer character than that found in the later tombs, and they had seen that evening representations not only of painting but of sculpture, which were certainly finer than any excepting those of the great Greek period—in fact, the tendency of some of the decorations, the portraits of the ladies, and the design of the throne would, he should think, almost delight the votaries of *l'art nouveau!* Another point also suggested itself: that if the plan of the Palace of Knossos had been thrown on the screen, without any intimation as to where it came from and what its date was, one might fairly have hazarded the guess that this was another excavation in Rome, which might very well pass for a portion of the palace of the Cæsars. The resemblance was the more marked when they recollected the way the building was set out, with a line of axis north, south, east, and west. The regularity of design was of a kind altogether different from what they imagined the earlier buildings to have been. There was one question he should like to ask Dr. Evans. In nearly all the photographs exhibited on the screen the upper portion of the walls was shown with a level surface all the way through, and in one of them there was some material on the top of the stone wall. Dr. Evans stated that the upper portions of the palaces were built with rubble and clay, and that the outer surfaces of these were covered with some kind of plaster or gypsum. He wished to ask Dr. Evans whether the clay of which these upper stories were built had become disintegrated by rain after the palace was deserted, and so the walls had fallen down, and the disintegrated clay had filled up all the lower portion of the palace, and thus, to a certain extent, preserved the frescoes which had been found.

Dr. Evans, replying on this point, said that it was as Mr. Spiers suggested, a great deal of the rubble and the clay from the upper stories filled up the crevices below, and helped to support the building.

Mr. Fyfe, at the request of the President, then followed with his description of the painted plaster decoration as above mentioned.

Mr. D. G. Hogarth, co-Director of the Cretan Exploration Fund, who was called upon by the President, said he did not think there was much for him to add at so late an hour. Dr. Evans had not told them one tithe of what had been found in the Palace of Knossos; he had not told them about his inscriptions, his tablets, his crystals, or his gems. But he gathered that the object of the meeting was to keep more or less strictly to architectural details. Therefore he would only say, with regard to the question which had been raised about the rubble of which the upper part of the walls of the Palace were made, that one would rather have expected mud brick. It was a fact that in three of the sites, more or less of the same period, which had been found in Eastern Crete, there were extensive remains of mud brick of a very fine kind, very well made and very durable; but those remains were so extensive—*i.e.* the bricks were so well preserved—that it was incredible to suppose that if there had been such bricks in the Palace of Knossos, they would not have been found in some parts; but, as a matter of fact, they had not been found. Therefore one was forced to the conclusion that, odd as it might appear, in this elaborately magnificent building the upper parts of the walls were formed of very much worse material than the smaller houses on sites of far less importance. That, as those who had been in Egypt might remember, in some way recalled Egyptian work, where one not infrequently found a wall beautifully decorated but in construction utterly unworthy of the decoration. But in a country like Egypt, where there was no frost and almost no rain, there was a durability about such materials which was hardly to be expected in Crete and countries with other climatic conditions. In fact, the preservation of the Palace of Knossos was for many reasons not among the least of the miracles that one had noticed in connection with it. Dr. Evans had not had time to tell them how this building was lying with some of its frescoed walls at a depth of hardly more than an inch or two below the ground; the plough had passed over it and people had dug over it, and yet it had remained. He could not say that he had formed any theory which would adequately account for the perfect preservation of the remains, except that Crete had been so constantly occupied with revolutions, and man had been too much engaged with killing his fellow-man to interfere to any extent with the remains of previous ages. The bricks which had been found in Eastern Crete were remarkable only for their great size—he was not acquainted with any bricks in Egyptian buildings so large, that is to say, two feet square, and very thin, four inches at the most; like very thick tiles rather than bricks, and laid with a kind of mud mortar. In the case of two or three houses the walls were found still standing, as though they were built of the finest stone. It was a very remarkable fact that the Palace of Knossos was not fortified, and it seemed that the town in which it stood apparently was not fortified either. It was not singular in that: so far as he knew all the other towns of the same period in Crete were not fortified. If one considered the state of things in the countries surrounding Crete, not only in that age but in subsequent ages, one was at a loss to realise this remarkable early period of history in which, apparently, the island was dotted all over with large unfortified towns—towns which had no reason to protect themselves against each other, or, apparently, to protect themselves against the outer world. He called attention to this to show that those words, "Minoan Empire," "Dominion of the Seas," θαλασσοκράτωρ, which were often used in connection with Cretan towns, were not out of place. It was impossible to conceive, if Crete had been only a small power, that kings possessing such great wealth as there must have been in this Palace of Knossos could have lived in unfortified buildings. Not only did the painted decoration show that there were fine materials in use for building purposes, but there was an immense amount of evidence to show that they possessed abundance of gold and silver vessels, which would rival anything that had been found in Egypt or Mycenæ. The beautiful vases which Dr. Evans had shown, which were of a pre-Mycenæan period, and those imitations of metal work in clay of a most remarkable kind, spoke to the existence of a large number of beautiful vessels in precious metals such as gold and silver worked very fine. Some day they hoped to find the gold and silver vessels which gave such an impetus to the potter's art in Crete. But that would never be until they happened upon the royal tombs or, at any rate, upon a cemetery in a better state of preservation than anything yet found.

The President remarked that there were several gentlemen present whom they would have been glad to hear, but the hour was late, and their time had run out. He should like to say, with regard to his remark to Mr. Macmillan, that it was rather with the idea of explaining why the financial support given by the Institute to the Cretan Fund was not greater than it was. He could only say for himself that he had been so intensely interested that evening that he should certainly become a subscriber to the Society, and he hoped many others of their members would do the same; for he understood from Mr. Macmillan that there was a considerable deficit each year in the funds, and that that deficit had to be borne by those who certainly ought not to have to bear it after all the trouble they had been put to in carrying out this work. He would now only ask the meeting to pass a most hearty vote of thanks to Dr. Evans for his paper, and also to Mr. Fyfe for his description of the decorations.

Dr. Evans, in responding, said that he felt, not only in the case of what Mr. Fyfe had said himself, but in the case of so much of the illustration of his own paper, how very deeply they were indebted to Mr. Fyfe for his very skilful work on the site of Knossos; and he was very glad that the Journal of the Institute was to be the vehicle of bringing out some of his very excellent work in a public form.

Vauxhall Bridge.

The following correspondence has passed between the President of the Royal Institute and the London County Council:—

9 Conduit Street, W.: 4th December 1902.

Sir,—The Council of the Royal Institute of British Architects desire me to express their great regret that the London County Council have not been able to adopt the suggestions set forth in their petition of the 10th November.

While, however, recognising the fact that the question of material has been settled by the London County Council, we desire most respectfully to express the earnest hope that, as the bridge will depend for its success on its initial design, which comprises artistic treatment, the Architect may be associated with the Engineer from the very beginning.—I am, Sir, yours faithfully,

Aston Webb.
President.

The Clerk to the London County Council.

London County Council: 16th December 1902.

Sir,—I laid before the Bridges Committee the letter of the 4th instant signed by the President of the Royal Institute of British Architects, with reference to the design for the superstructure of Vauxhall Bridge, and in reply I am directed to inform you that the Committee particularly wish it to be understood that the design which was hung up in the Council Chamber was solely for the purpose of showing the lines on which it was proposed that the bridge should be constructed, and that the filling in of the spandrils and other details on the cartoon are not to be considered as part of the design. I may state that in the consideration of these matters the Council's Architect has been associated with the Chief Engineer.—I am, Sir, your obedient servant,

G. L. Gomme,
Clerk of the Council.

The Secretary R.I.B.A.

Special Elections to Fellowship.

The Council at their Meeting on Monday the 15th inst., pursuant to the proviso in By-law 9, elected the following gentlemen to the Fellowship of the Royal Institute of British Architects—viz.

Joseph Wood, *President of the Bristol Society of Architects*; of 35 Park Street, Bristol.

Henry Dare Bryan, *Hon. Secretary and Treasurer of the Bristol Society of Architects*; of 38 College Green, Bristol.

Samuel Sebastian Reay [*A.*]; of 47 Milsom Street, Bath.

World's Fair, St. Louis: Liberal Arts Department.

The Council have received the following letter, and have the matter referred to under consideration:—

St. Louis, U.S.A., 10*th July*, 1902.

Dear Sir,—I take great pleasure in sending to your Society certain printed matter relating to our great International Exposition which is to open in this city 1st May 1904.

This Department is making special efforts to secure a large display of exhibits illustrating the work of the Architect, which will fully demonstrate the importance of the profession through the large share it bears in the world's progress toward the highest utilisation of the forces and materials of nature for the benefit of mankind.

It would be particularly gratifying to have the work of your members generously displayed among the exhibits in the form of models, plans, photographs, relief maps, literature, &c.

Will you kindly consider the propriety of having your Society take such steps as may be deemed necessary and proper to make a creditable exhibit of the work of your members?

Your Government will doubtless be well represented at the Exposition, and it might be practicable to secure its aid, through your Commissioner General, particularly in the line of public works.

Trusting that I may be favoured with your co-operation in the interests of the profession, and that this communication will receive an early reply, I have the honour to be,—Yours very truly,

J. A. Ockerson,
Chief, Department of Liberal Arts.

The Secretary R.I.B.A.

MINUTES. IV.

At the Fourth General Meeting (Ordinary) of the Session 1902–3, held Monday, 15th December, 1902, at 8 p.m., Mr. Aston Webb, A.R.A., F.S.A., *President*, in the Chair, with 39 Fellows (including 15 members of the Council), 34 Associates (including 2 members of the Council), 4 Hon. Associates, and Visitors, the Minutes of the Meeting held 1st December [p. 90] were taken as read and signed as correct.

The following members attending for the first time since their election were formally admitted by the President and signed the Register—viz. Edwin Wortley Montague Corbett, Henri Favarger, Leonard Martin, *Fellows*; Edwin Dace Brown, William Herbert Hobday, John Swarbrick, Charles Frederic Ward, *Associates.*

The following candidates for membership, found by the Council to be eligible and qualified according to the Charter and By-laws, were recommended for election:—As FELLOWS, Thomas Edgar Eccles [*Assoc.* 1890] Liverpool; William Chasen Ralph, Wigan. As ASSOCIATES, Archibald Lawrence Holder (*Probationer* 1898, *Student* 1900, *Qualified* 1902); Horace Moger (*Probationer* 1894, *Student* 1898, *Qualified* 1902); James Maclaren Ross (*Probationer* 1896, *Student* 1898, *Qualified* 1902).

A Paper by Dr. Arthur J. Evans, F.R.S., F.S.A., entitled A BIRD'S-EYE VIEW OF THE MINOAN PALACE OF KNOSSOS, CRETE, having been read by the author, and illustrated by lantern views, and a description of the coloured plaster decoration at the Palace of Knossos, similarly illustrated, having been given by Mr. Theodore Fyfe, on the motion of Mr. George A. Macmillan, F.S.A., seconded by Mr. R. Phenè Spiers, F.S.A. [*F.*], a vote of thanks was passed by acclamation to Dr. Evans and to Mr. Fyfe.

The proceedings then closed and the Meeting separated at 10.10 p.m.

REVIEWS.

HOUSE DECORATION.

Our Homes and how to beautify them. By H. J. Jennings. With numerous illustrations. La. 8o. Lond. 1902. Price 5s. net. [*Harrison & Sons, 59 Pall Mall, S.W.*]

Beauty in our homes: which of us does not wish to attain it—a thing desirable in itself and having great influence on our temperaments, morals, and happiness? This little work has therefore a subject of great and general interest. It is true that the title sounds ominously like that of a magazine article whose ideas on art are limited to the conversion of soap-boxes and other unsuitable objects into something supposed to be artistic by the liberal use of white enamel and coloured ribands. But fears on that point may be dismissed; the author does not deal with trivialities of that kind. Nevertheless the work cannot be considered as a message from an artist to artists, but rather as the gossip of an amiable cicerone to the general public. There are chapters on some of the historic styles of furniture, but they are too sketchy and incomplete to do more than introduce these styles to the reader's notice. After these the author proceeds with his main task—the consideration of the decorative possibilities of the various rooms of a house, those of a flat being treated separately later on. Then he discusses that great difficulty, the choice of a style; and here he ignores the fact that a style should be capable of ministering to all the wants of man by simple variations of itself, and departs from his own axiom, "Another guiding principle of decoration is that beauty proceeds from variety in unity." For, speaking of bedrooms, he says, "You may have one in the Marie Antoinette style, another in the eighteenth-century English style, and a third in the twentieth-century style"; and of the smoking-room, "For style severe applications of the Oriental may be advised." "Take the dining-room: you may have it in Italian Renaissance, François Premier, Elizabethan, Jacobean, eighteenth-century English, or modern English Renaissance." "For a drawing-room there are available the whole range of French styles from Louis XIV. to the Empire, also the English Chippendale to Adams period, and, if these give not scope enough, the new Renaissance as practised by the English school." Apparently the author thinks it not only practicable but advisable to have most of these various styles in the same house, although the house, being, as supposed, already in existence, must possess some style of its own, which should govern all interior decoration.

Apart from this, the views generally are sound and reliable, though there is a well-marked bias in favour of art as supplied by the manufacturers. However, that is really the art of the craftsman of to-day, and, as such, demands the study and unprejudiced criticism of all those interested in the trend and progress of modern craftsmanship. To the discriminating reader the book may furnish some useful suggestions. The illustrations, which are excellent, go far towards making it interesting.

J. HUMPHREYS JONES.

ALLIED SOCIETIES.

THE CARDIFF SOCIETY.

From CECIL WILSON, *Hon. Sec.*—

A Meeting of the Cardiff, South Wales and Monmouthshire Architects' Society was held at the Central Library on the 11th November, when Mr Ballinger (Chief Librarian, Cardiff) kindly had the collection of works on Art and Architecture arranged for the inspection of members and their friends.

The result was a most successful and instructive evening, about forty students attended, and the collection of books shown turned out to be one of the most valuable collections in the provinces. The object of the Society was to give students an idea of what books were available in their own town for reference, and the Libraries Committee have been asked to have printed a special hand list for the use of Architects' Students.

THE DUNDEE INSTITUTE.

Some Suggestions for Young Architects.

The opening meeting of the session of the Dundee Institute of Architecture was held on the 18th November, when the following address was delivered by Mr. A. A. Symon, *President*:—

In presuming to deliver an opening address for the Session of 1902-03, I feel that my first words must be an acknowledgment of the honour you have done me in electing me President of the Institute, and to convey to you my cordial thanks. I am not quite sure, however, that my feelings are those of unalloyed gratitude, for the prospect of delivering an address at this opening meeting has been hanging over me like a pall, and has rendered me ill at ease, and sometimes very uncomfortable. Indeed, I have a feeling that it is rather presumptuous on my part to come out of my obscurity and pretend to have anything worth saying to an audience of Dundee architects. For this reason I have adopted as the title of my address "Some Suggestions for Young Architects," in the expectation that, while I may not be able to teach the old men, I may have something to say to the young; and if what I say stimulates any of our young men into greater activity and greater earnestness in the work of their life, if it tends to raise their aims and ambitions to a higher level and a greater nobility of character, my object will be to some extent attained and my labour will not have been in vain.

In the first place, let us consider what should be the aims of a young lad entering the profession. Perhaps the first thing considered and aimed at is the earning of a livelihood—I think comparatively few enter the profession for the purpose of making money. If any one is foolish enough to harbour designs of this sort, he will not be very long in being disillusioned; no one ever heard of an architect millionaire, and so far as my experience goes, very few architects are able to retire so long as they are able to work. Here I make bold to say that the making of money is not the chief end of man's existence. It should not be the chief aim of any architect; we have something far higher to look to and to work for than grovelling with a muck rake.

The lad who enters the profession with the object of earning an honest livelihood has a definite purpose (though it may appear somewhat prosaic) which may develop into a noble ambition, not only to become an honoured and respected citizen, but a man who, by his architectural skill, will leave the world the better for his having lived in it.

Let us see how this is to be attained. It is just possible that a young man may imagine, on entering an architect's office, that it is a land of Beulah; he will soon find he is mistaken. If he is in earnest he will find that it means plenty of hard work, and that he must put his shoulder to the wheel. Yet no one need be discouraged at the prospect of hard work, even though it may sometimes encroach on a holiday. It does a man no harm; men were never intended to be idle, and it will be found generally that the men who work hardest are the men who have most time to work.

I should just like to make a few suggestions with regard to the work that a young lad is called upon to do on entering an architect's office. I should say that his first duty is to open his eyes and to keep them open. How many young lads (we older men know only too well by experience) seem to go about with their eyes shut and their mouths open. They seem to have no powers of observation; they never know anything; they have always got to be told, and the next time they have to do the same thing they are just as wise as ever.

Be ever on the alert and ready to improve your time. How many of our pupils do we find idling their time, letting the days and years of their apprenticeship slip past without so much as making an honest endeavour to gain a rudimentary knowledge of their profession. What is the result? They will know that too well when their time is out. Their master is tired of them and glad to get rid of them; they find themselves out of a situation and unable to get another; they have neither drawings nor anything else to testify to their ability—they may get a job at a few shillings, or be taken on as improvers somewhere, and then they wake up and start to learn. Therefore I say again, be on the alert and eager for knowledge.

Another point I would emphasize, never be afraid to show your ignorance. We are all learning, and it seems to me that so many things are required to make up an architect's education that it is impossible for one man to learn them all in a lifetime. Life is too short, and seems only an apprenticeship; and to give a man a chance he should be able to live 150 years without any dimness of the eyes or abatement of his natural strength.

This long life is not yet, however, and unless we discover the *elixir vitæ*, or some new lifegiving microbes, or find a more effective way of getting rid of the evil-disposed ones, I am afraid it is not likely to be for a long time to come. If, therefore, you can gain some information about a subject by asking a question, do not let any false pride keep you back. It is no disgrace to be ignorant of a subject; but once we have learned anything that is worth keeping we should on no account forget it. Anything once stored in the memory should be retained carefully, or, at least, the key to its whereabouts.

Perhaps I may be reminded here of the old saying, that "All work and no play makes Jack a dull boy," but I would like to answer, that all play and no work is very likely to make Jack a useless loafer; and, certainly, the present-day system that many of our young men have of making football and other recreations the business of life, is not calculated to enable us to retain our lead in the race that has begun between ourselves and the other great nations for the world's trade.

Then not only is it necessary to be diligent, but also to utilise all the means of education that are available. I remember attending art classes in the high school here when Mr. Kennedy was the art master, over thirty years ago. The curriculum then was a mere skeleton of what it is now, but it was the only thing of the kind to be got in Forfarshire. Now you have in every town an excellent art school, where the fees are nominal and the teaching of the highest order. There is no excuse to-day for a pupil not attending classes, and thus increasing and supplementing the knowledge he is at the same time acquiring in the office.

Again, I think the Dundee Institute is doing a good work amongst our young men in its efforts to stimulate and encourage the study of old buildings by the competitions it conducts every year. There is nothing more helpful to a young architect than sketching and measuring old buildings.

But I must pass on to consider in the second place the work of a young man after he has passed his apprenticeship. Now, I think this period is the most important in his life, and in this period he shows whether he is to rise in his profession, or to become simply a hewer of wood and a drawer of water. If he is following out the aims of a noble ambition, he will have discovered that everything is not learned during apprenticeship. The chances are that he will now have begun to understand many things that he never understood before, and that there are many things yet to learn. This thirst for further knowledge usually takes the form of a desire to leave his native district and see how others do their work. It will not harm him in the least, though he has to rough it a bit. If he go to Edinburgh, Glasgow, or London, or any other large centre, he will find much to interest him, and will have opportunities of learning that he will never get at home. He will find different methods in vogue there; sometimes he will find them better than his own, and sometimes not so good; at any rate, he has the opportunity of judging for himself, and when he gets into practice on his own account he can apply whichever he thinks best. In London or Glasgow they have splendid architectural schools where leading architects of the day lecture and criticise and advise students in their work, and under competent teachers these classes are doing an enormous amount of work in training the youthful generation of architects.

Then the Examinations of the Royal Institute of British Architects are well worth entering for. The labour of preparing for them is exceedingly useful; this is shown by the increased number of students who go in for them. It makes a student work up a great deal that he would not otherwise bother with. Some years ago an election as an Associate of the Royal Institute of British Architects meant very little, so far as proof of accomplishments was concerned. Things are different now, and at the present moment I know of no better training for a young architect than to set himself to pass the Final Examination. The fact of having passed that examination is at once a testimony of a solid groundwork of knowledge and ability on which he may proceed with more advanced studies in design and construction, proficiency in which will qualify him to engage in successful practice as an architect.

All this, however, means hard work, and perhaps burning the midnight oil; but of course we all know that there is no royal road to learning. There is no free education—it has all to be paid for in some way.

Nor is this all. There are many prizes to be had that are well worth competing for, and these may give a man the opportunity of travelling abroad for the purpose of study who might not otherwise have such opportunities, and thus extending his knowledge and enlightening his views, and making him acquainted with the best work of ancient and modern architects.

Let no man faint by the way and think that he has no chance of these prizes. A man who is determined to persevere may accomplish anything; it is not always brilliant talent that is the most successful. Let no man be discouraged. There may be a big crowd at the bottom of the ladder, but there is always plenty of room at the top. The thing that is really absolutely necessary is the capacity for taking pains, and energy to persevere in one direction.

As a matter of fact Scotsmen always do very well at these competitions, and I think that Dundee has reason to congratulate itself on the fact that a Dundonian stood so high on the list for the Tite Prize last year.

Now, when I suggest that young men should go to large cities, or at least leave their native place and see about them a bit, I do not for a moment mean that they should stay there. I think it would be a great misfortune that all the good men should leave Dundee and not come back. We have as much need for educated architects in Forfarshire as anywhere else. It seems to me that there is a good enough field at home for good men—quite as good, perhaps, as there is in larger towns. Perhaps, however, if they all come back, we may have too many clever men.

Another matter I think incumbent on every architect is to gain a knowledge of materials—I mean something of the practical knowledge of a tradesman, such as being able to tell the proper bed of a stone, and the different kinds of stone, timber and slates, &c. I remember once being in the company of two architects—I won't say if they were Dundee men—when the conversation turned on the proper bed of stones, and they both acknowledged that they could not tell the proper bed even of Forfarshire stone. I must say I was a little astonished. A little while ago I said that we need never be ashamed of being ignorant; but I would here qualify that statement and say that there are exceptions to this rule. I think it is a pity when an architect is entirely at the mercy of a tradesman or a clerk of works in such matters as these. Cases will crop up when a decision may be asked from the architect, and it must be very awkward if he does not know, and such questions will crop up when you have least desire to meet them.

Architects are often called upon to act as judges or arbitrators in cases of dispute. I think that an architect should cultivate what I may be allowed to call a judicial mind; this I think is necessary on account of the nature of his profession. Though he is employed and paid by the proprietor, yet he is daily called upon to decide what is fair as between man and man. It won't do to take the side of the employer as against that of the contractor. He must learn to keep the balance even, or he will cause the very thing that he is there to prevent, viz. disputes; otherwise, why shouldn't he be paid off immediately after he has made his designs and details? And if he should be the means of landing the client and contractor in a law-suit, it cannot be a very nice reflection, and it certainly will affect his reputation in the long run. It should always be your object to prevent a case going into Court: so long as you keep it in your own hands you can do many things to save strife and get an amicable settlement. Above all, when dealing with a dispute, always keep your temper; one always gets on best if there is no temper shown. Of course you sometimes meet with clients and contractors of an imperious temperament, strong men—and all strong men are rude men—who like to bully architects and every one else. That kind must be dealt with very cautiously, but none the less firmly. Altogether, an architect requires a good deal of tact.

I now come to the most important question that an architect has to deal with, viz.: "His work in carrying out his client's wishes." Now there is one element that should never be wanting in an architect's life—I mean a love of his work. You may put it on a higher plane if you like, and term it a love of art. I have mentioned that there are prizes for those who are willing to exert themselves to earn them, but the real prize is the joy one has in doing one's work and in putting one's best into it. Without this to sweeten the troubles and disappointments that arise, life, I am afraid, is scarcely worth living.

Clients are often very exacting, and workmen are often very careless, and it is necessary for an architect to be always on the alert. I said before that a young man entering an office should open his eyes, and keep them open; but it is much more so in the case of the architect in practice. There are so many little things to look to, and so many little details one is apt to forget, that unless a man has acquired a habit of keeping his eyes open he will be sure to make mistakes. These mistakes are often unseen until the house is occupied, when it is too late to remedy the error. It may be the placing of a door, a fireplace, or a window, or the size of a pantry, or a hundred and one things that can be placed in a way that does not please the lady of the house, and of course the blame is laid on the architect. They say two worries of a man's life are a smoky chimney and a scolding wife. But if a man loves his work he will grudge no pains in making his work perfect, every detail must pass under his eye, and nothing be left to chance. He is as a fond mother nursing her child, he spares no labour to accomplish his purpose.

Even with all this care and attention to details one finds that things go wrong. Some clients have the faculty of making themselves and others very uncomfortable over small things, and you would think that the veriest trifle is of more importance than the whole building.

I remember once, after having spent over £2,000 in building new premises for a licensed grocer, when the place was opened he found that in washing his bottles the labels that were washed off covered the grating in the tubs and prevented the water getting away. I was sent for and asked what could be done. I suggested that the assistant, when running off the water, should put down his hand and lift out the paper; but this would not satisfy him, and he told me that this was the most important thing in the whole place, and that he would not have cared though the whole house had been upside down if this had been right. The matter wrought on his mind so much that he almost went off his head, and he had to go away for a voyage round the British Isles for the benefit of his health. I am glad to say that he returned from his trip entirely restored to health, and I have never heard of the gratings being choked since.

This is a specimen of the trifling things that will cause trouble and must be attended to; and without an absorbing love of his art an architect would have so many vexations that I think life would have very little pleasure for him.

This love of your work will also stimulate you to do the best you can; let everything that passes through your hands be the very best you can produce, so that you may be able to look back on it with pleasure, and let no detail have the appearance of slovenliness, but let it be well thought out in every part.

It is important to remember that the work of an architect is intended to be permanent. He is not writing on the sand—he is inscribing his name on materials that will keep his memory green for many a day, and will record his faults and mistakes as well as his successes.

This is one of the most interesting things in the profession, and ought to make us regard our work as something sacred, not to be lightly or carelessly treated, but something to put our whole soul into, and with a desire to make it the very best we can produce; and if we have done our best we can look back on our work and, whether we have succeeded in carrying out our ideal or not, we can say that we honestly did our best.

Another point that I would like to emphasize is this: that you be honourable in all your dealings with your brethren in the profession. I do not say that it is possible always to agree—it is, perhaps, inevitable that we should sometimes take opposing views of the same question; but we can certainly avoid all underhand work. I am afraid that the commercial spirit which dominates the present generation is not wanting, even among architects. Some men are ambitious to do a large business. They are charmed with the idea that they are becoming famous in the profession. Other men have greatness thrust upon them, and are pressed to accept work whether they will or not. Against such there is no law; but I think, in everything, we can deal honourably with our brethren.

I am afraid I have tried your patience overmuch, as I have no doubt many of you knew all this before. The sum of the whole matter seems to be that, to a man who is to succeed in his profession, he must be ever ready and ever working. If he is fortunate in getting many commissions he will find his hands full to overflowing—he will have very little spare time, and no time to waste. He will find clients exacting and tradesmen dilatory. Sometimes he may even meet with a tradesman who is inclined to charge too much, and he may also stumble across a client who is unwilling to admit that such a large account is due. He may also meet with clients who will apologise for giving him so much trouble, but he may be assured that, if they did not give him trouble, they would not be willing to pay his account. But, with all these drawbacks and many more, I make bold to say that a man who loves his profession will make light of them. They are only so many difficulties to be overcome, and every triumph is adding new energy to the effort to obtain more:

> Something attempted, something done,
> Has earned a night's repose.

I would also say, the man who has a genuine love for his work does not love it solely for the fees it brings in. No doubt we must all have fees, but it is very unwise to make that the chief object of our ambition, and especially so to make it an end in view when advising a client regarding expenditure. I am persuaded that the only honest position for an architect to take up is to consider himself as in the client's place, and to be as careful in the expenditure of his client's money as he would be of his own.

I have no doubt you are all aware that the position of an architect is no sinecure, and the variety of talents required to make an expert architect is only equalled by the wide range of subjects he has to deal with. He is expected to know everything and to deal with everything without a mistake. This is, perhaps, more apparent in provincial towns than in large centres. In the provinces one man is called upon to do all sorts of work, but in the large centres the work is more specialised; the result being that, in the latter, the work is very much in the hands of specialists. These, of course, are more perfect in the art of their own branch because they have devoted their attention to that alone. But the provincial architect cannot hope to be a specialist. He is only an expert, and therefore must have a knowledge of many things.

I think I have said enough to show that an architect must work hard if he desires to lead in his profession, and owing to the advances made in education it must be evident to everyone that, year by year, this is getting more important. Everything is done at railway speed, and everyone is in a hurry. The slow-going man is apt to be shunted out of the way to make room for greater energy, and unless we push our way we may at any moment be ground in the dust.

ROYAL INSTITUTE OF IRELAND.

Annual Meeting and Dinner.

At the Annual Meeting of the Royal Institute of the Architects of Ireland, held in the rooms of the Institute at 20, Lincoln Street, Dublin, on the 4th inst., the following address was delivered by Mr. George C. Ashlin [*F.*], President:—

As it is usual on these occasions for the President to say a few words on some subject of immediate interest to the profession, I propose dealing to-day with two matters which are likely to come before us for discussion during this session. The revision of our recognised Form of Building contract has now become a pressing question, chiefly in consequence of the communications addressed to us by the Irish Builders' Association, and of the favourable view taken of many of their proposals by the Royal Institute of British Architects and of other bodies representing the profession in England. Now I wish, as far as possible, to avoid expressing any definite opinion on any of the proposed changes; but as the subject has been referred to in many Presidential and other addresses recently, it may not be out of place for me to point out what seems to me the principal considerations we should bear in mind when dealing with it.

In the first place, the present recognised general conditions of contract have stood the test of experience for many years fairly well, and have been generally accepted by both parties to the contract. Secondly, no desire for any radical change has been expressed on the part of the employers. From the nature of the case, this could hardly have been expected, so far; but, as they will naturally look to us to safeguard their interests, it would seem proper to endeavour to ascertain their views by consulting public boards representing employers, and by adopting any other means in our power before consenting to any radical change in the present recognised form of contract.

There appear to be two such changes proposed, viz.:—(A) The appointment of an independent arbitrator to adjudicate during the progress of the work on such questions as the meaning of the plans and specification hitherto left to the sole decision of the architect; (B) the making of the quantities part of the contract.

Referring to proposal A, the principle involved seems an equitable one, but the following occur to me as possible objections proper for consideration, especially having regard to the circumstances existing at present in Ireland. First, the difficulty of finding a suitable arbitrator who would be always at hand in order to avoid delay to the work, owing to the comparatively small number of practising architects and the remoteness of many of the works in this country. Secondly, the probable objection on the part of employers to incur the subsequent additional expense, and the danger that might occur in many works of their wishing to dispense with both architects and arbitrator. I need hardly remark that circumstances in England are largely different. where in some provincial towns there are as many practising architects as in the whole of Ireland, and where, moreover, builders have not the same opportunity of becoming acquainted with the views and character of the architect before entering into the contract as they usually have over here. Referring now to proposal B, which means, as I understand it, that where either of the contracting parties found that a larger or lesser quantity of workmanship or materials was required to carry out the plans and specification than was provided in the surveyor's quantities, he could claim a corresponding addition or reduction in the contract sum. This has also much to recommend it as an abstract principle; but the following considerations should be borne in mind—first, the cost of the work could not be accurately ascertained until the work was completed; secondly, in many cases the work might have to be remeasured to a great extent, thereby increasing the surveyor's charges; thirdly, the builder might have an undue advantage, as in the case of many items the discrepancy in the quantities would become known to him only. In connection with this proposal, the system adopted in Glasgow of two complete measurements might be considered, as this completely obviates the second objection I have named.

I regret that I have not been able to compress my remarks on this rather dry topic in a smaller compass, as it leaves me little time to allude to a more congenial subject, or rather group of subjects, viz. Education, Qualification, and Registration. A most laudable desire has lately sprung up amongst our junior members and aspirants in the profession to improve the system of architectural education, with the view of obtaining a distinctive qualification by compulsory examination, as in other professions, and, I presume, of paving the way ultimately to the statutory registration of all practising architects. I am sure the senior members sympathise with this desire thoroughly, and would be most willing to aid the movement in any way in their power. There is no use, however, disguising the fact that it is most difficult to determine the best means of obtaining even the first of these objects quickly under present conditions in Ireland. Still, I think, if there is grit enough in the movement amongst the junior members, and if too much is not attempted at first, something of a modest character, at all events, may be accomplished in the near future towards the improvement of architectural education in Dublin.

I think the views expressed by the deputation of the Architectural Association of Ireland at the Council meeting to-day were eminently practical, viz. that the facilities for study in the various branches of the profession should be provided here in Dublin to be of any avail, and that the examinations should be specially organised and conducted to suit the special circumstances that exist in Ireland. It might be well to provide also that the candidates should attend an approved class or school exclusively devoted to the education of practical architects.

If such a scheme could be perfected, I throw out the suggestion that this Institute might, after some time, put forward a recognised form of apprenticeship containing a provision making it obligatory for the pupil to comply with this condition, and to pass the examination before completing his apprenticeship, in the same way as it has put forward the required form of building contract.

The Annual Dinner, held the same evening at the Shelburne Hotel, Dublin, inaugurated a new departure for the Institute. Mr. Ashlin was in the Chair, and there were present, besides a numerous company of members, the Bishop of Canea and other clergy; the respective Presidents of the Royal Hibernian Academy, the Incorporated Law Society, the Royal College of Surgeons, the Institution of Civil Engineers, the Agricultural Association, and the Master Builders' Association; some of the chief City officials, and other representative men.

THE MANCHESTER SOCIETY.

The Chair of Architecture at Owens College.

The annual dinner of the Manchester Society of Architects was held at the Queen's Hotel on the 12th inst. The President, Mr. Alfred Darbyshire [*F.*], presided, and Mr. John Slater, *Vice-President R.I.B.A.*, represented the Institute.

In response to the toast of the Royal Institute of British Architects, proposed by the Chairman,

Mr. John Slater said that while in recent years not so much had been heard of the vexed question of the compulsory registration of architects, many members of the profession, especially in the provinces, thought that compulsory registration would be found a panacea for most of the evils from which architects and architecture were suffering. If registration were to come and be a success it could only be through the action of the Royal Institute. He was not altogether without hope that in the not far distant future some practical means of bringing that about would be found. With regard to the work and influence of the Institute, both had increased during the last year or two, and no one who had not sat at the Council of the Institute for some years could have the least idea of the enormous number of professional questions referred to that body. They had been consulted more than once lately by the Government and by public bodies with reference to matters of great public interest, and he was glad that that sort of spirit appeared to be gaining ground. The more municipalities and those who had to do with the architecture of buildings sought the advice of the local societies, the better it would be both for architecture and for the public. Architecture was a profession—or a business, if one preferred to call it so—but it was also one of the fine arts: indeed, it was the mother of all the arts, because painting and sculpture, and what not, had only achieved their greatest successes when they enhanced the most brilliant pieces of architecture. Treating architecture as an art, no one could possibly exaggerate the influence on the younger generation when they were brought into contact with art and artistic matters at an early stage. Manchester had some most admirable Board schools, well built and well equipped in every way; but with regard to their interiors, the class-rooms were not quite as beautiful as they might be, and it would be a good thing if the students at the Art School were encouraged to do something towards the beautification of the Board schools. This would be splendid practice for the art students, and the educational effect on the children of the Board schools would be really great.

Mr. Edward Salomons, in giving the toast "The Victoria University and the Owens College," said that there had been a wish on the part of the College to found a Chair of Architecture, and after many meetings of the Committee appointed by the College and the Manchester Society and the School of Technology, the scheme had been accomplished, and it was agreed that a Professor should be appointed to fill a Chair at the Owens College and to be the teacher of Architecture at the School of Technology. The appointment had not yet been made, but steps had already been taken towards making it.

Sir James Hoy, in response to the toast of "Technical Education," said that it was intended that the Chair of Architecture at Owens College should be a joint professorship. The Professor was to be paid partly by the College and partly by the School of Technology. The initiatory steps were progressing satisfactorily, and there was good reason to suppose that within the next twelve months such arrangements would be made as would place what one hoped would then be the University of Manchester in the same position in regard to Architecture as was at present occupied by the University College of Liverpool.

THE NORTHERN ASSOCIATION.

The late William Searle Hicks (Newcastle).

The Northern Association send the following record of their Past-President, the late Mr. W. S. Hicks:—

Mr. William Searle Hicks, of the firm of Hicks & Charlewood, architects, of Newcastle-on-Tyne, whose death took place on Friday, 21st November, was born on 6th March 1849. He came of a Devonshire family, and was connected with some of the principal families of that county. His father was the vicar of Pydeltrenthide, Dorset, and his mother was Emma Barry, niece of Sir Charles Barry, the architect of the Houses of Parliament. Educated in the South of England, at the age of seventeen he was articled to Messrs.

Austin & Johnson, successors of John Dobson, of excellent memory. This was the best office in the Newcastle district, and the opportunities which the earnest pupil thus had of seeing the best work were not lost on him. When his pupilage was over he took charge of the firm's branch office at Middlesbrough, and in 1875 became a partner of the firm of Austin, Johnson & Hicks. This partnership continued seven years. In 1882 Mr. Hicks commenced his own independent practice by rebuilding Shilbottle Church; and as time went on he built the new churches of Lambley and St. Cuthbert at Blyth, and also restored that of St. John Lee, near Hexham.

In 1888 Mr. Hicks was joined by his brother-in-law, Mr. Henry Clement Charlewood [*F.*], making the present firm of Hicks & Charlewood, at Newcastle. St. Aidan's Church, Newcastle, and St. Margaret's Church, Brotton in Cleveland, were then commenced; and soon afterwards, on the resignation of the late Mr. R. J. Johnson, Mr. Hicks was appointed Diocesan Surveyor for Newcastle, which appointment he continued to hold till last year, when pressure of other business compelled him to relinquish it. Since 1882 no fewer than fifteen new churches have been commenced, and most of them completed, not to mention numerous mission chapels, parochial buildings, and schools. The restoration of churches has formed a very large section of the work of Messrs. Hicks & Charlewood, not by any means confined to the North of England.

For domestic work of the highest class Mr. Hicks was in great request, his talent for artistic details being so conspicuous that he was constantly called upon to design all manner of decorative work, both ecclesiastical and secular. In addition to those already mentioned, some of his principal works are:

New Churches.—St. Hilda's, Sunderland (built in memory of Bishop Lightfoot); St. John's, Crewe; Eston Grange, Boosbeck; St. Oswald's, West Hartlepool; St. Chad's, Bensham; St. Luke's, Thornaby; and St. Barnabas', Jesmond. The last four are now in course of construction.

Church Restorations.—Haughton le Skerne, Durham; St. Peter's, Wallsend; Easington, Durham; Grinton in Swaledale, Yorkshire; Kirkwhelpington, Northumberland; Terrington St. Clement; North Creake; Glandford; Shottesham; and Wymondham Abbey—the last five being in the county of Norfolk.

Domestic Work.—Blagdon; The Castle, Castle Eden; The Hermitage, Hexham; The Leazes, Hexham; the New House of St. Wilfred's Priory, Hexham; Audley's Wood, Hampshire; and a large number of vicarages and other houses.

Decorative Work.—Specimens of his best decorative work can be seen at St. Cuthbert's, St. Mary's, Jesmond Parish Church, and St. Matthew's, Newcastle; Newburn Parish Church; St. Anne's, Bishop Auckland; Bamburgh; St. Cuthbert's, Bensham: and in many parts of Yorkshire and Norfolk. The pastoral staff of the Bishop of Durham, presented to the late Bishop Lightfoot, was designed by Mr. Hicks; also the President's chain and pendant of the Northern Architectural Association.

In the Northern Architectural Association Mr. Hicks was a tower of strength. He joined it in 1886, was Vice-President in 1888–9, and President in 1890, 1891, and 1892, during which period he delivered two presidential addresses. He contributed handsomely to the Association Library, among his contributions being two interesting original papers, entitled "Notes on the Recent Discoveries at Kirkwhelpington Parish Church, 1892"; and "Traceries, and their Position in Architectural Design, 1896." He designed the book-plate of the Library; and at all times proved his readiness to aid the Association financially and otherwise, repeatedly acting as adjudicator of prizes for Students' Drawings, &c.

The impression he produced upon his professional *confrères* of the Northern Association was evident at their first business meeting after his funeral, when the President (Mr. Frank Caws), speaking for himself and others, said "that he hardly knew how to express all that he felt ought to be expressed, for it seemed difficult to put into words what they felt with reference to the passing away of so eminent a member of their Association. He held in that city in the north of England, and indeed in a much wider sphere, one of the highest positions as a church architect, and in that respect they held him in the highest esteem. But when they had said that, when they had examined and expressed admiration for the excellence and beauty of his works, there still remained to be said what they felt most deeply about the man himself. His was no ordinary character. All who had come near him, and had been privileged with his acquaintance, must have felt that in him they had one whose character was so gentle, so high, and in every way so exemplary that they as an Association might well feel proud to have such a gentleman among them as one of their members. 'That which made men great in England was not their cleverness but their character.' They as architects had their trials, and there was no profession, he thought, more calculated to try the soul of a man than that of an architect. By the time a man came to the end of his life as an architect, he might be taken to be pretty well disciplined; and those of them who knew what those trials were, and how difficult it was to steer a straight course and come honourably through the battle, could admire all the more the life of him who had just been taken so suddenly from them. He was a bright example they all might well follow."

The manner in which Mr. Hicks impressed

those most intimately connected with him in his daily work is shown by the following tribute from his former pupil, Mr. Charles S. Errington, who writes:—"He was a man of lofty ideals, and was not only a master of art but had also early in life set himself a high standard of professional morality, as was most surely known to those who knew him best; and many personal sacrifices were necessary on his part to uphold this standard. He never flinched in this matter, and his memory should be respected by his professional brethren on this account even if on no other. His loftiness of aim directed likewise his art. It was not sufficient for him that a thing was 'good enough,' it must be the best that he and his colleagues could do. His colleagues not only included the youngest member of his office staff, but reached to the meanest and lowliest labourer on 'the job.' All felt his influence, and no one was more ready than he at finding out the 'strong point' of even the humblest of his helpers, and his encouragement and kindly aid were never lacking. As an artistic draughtsman he has had few equals, his pencil never being idle. Always a student, always the students' friend—helping them on, cheering them when necessary, and never happier than when he had inspirited one of them with some of his cunning. Had his calling led him to London, his influence might have been wider: it could not have been more felt, however, and we North Country architects heartily concur with the Bishop of Newcastle's eulogy, and 'thank God for such a life having been spent in our midst.'"

On Saturday, 22nd November, *i.e.* on the day after Mr. Hicks died, the Bishop of Newcastle, preaching in St. James's Parish Church, Benwell, in connection with the consecration of the new aisles, said he "could not speak upon that occasion without one word of sorrowful thought of the past. There must come fresh to every one of them the memory of one who by his architectural skill had designed what so rejoiced their eyes and hearts that day. He had seldom in his life met a man whose whole soul was more completely filled with the fear of God; and with a desire to put into his art all that God had given him. There were few churches which had been restored in this diocese during the last fifteen or twenty years which did not show Mr. Hicks's wonderful skill and his resource in art. And when he thought what Mr. Hicks was—when he thought of the profound Christianity of the man—he could not but thank God that this diocese had had for so many years the skill and reverence of the faithful life, as well as the faithful work, of one to whom to-day they would allow him to pay this tribute of affection and respect."

Mr. Hicks married, in 1875, Anne Alice, eldest daughter of the late Rev. E. H. Adamson, M.A., Vicar of St. Alban's, Heworth, and leaves six sons and three daughters.

THE YORK SOCIETY.

Mr. Channon's Presidential Address.

The members of the York Architectural Society held their first meeting of the Winter Session at the Church Institute, York, on Friday evening, 28th November. The President of the Society, Mr. C. H. Channon [*F.*], occupied the chair, and delivered his Presidential address.

The President having referred to the honour conferred upon him in re-electing him, spoke of the object and aims of the Society. He stated that it had attained the twentieth year of its existence, and that it had been his privilege to be connected with it from its infancy.

He expressed regret that so many architects in the district of undoubted ability and repute still held aloof from joining the Society, and expressed a hope that some means might be devised for bringing the members of the profession more closely in touch with each other. He referred to the nobility and dignity of their calling, and urged upon all students the necessity of self-sacrifice and effort. After speaking of the architecture of the past, and the possibilities that might be theirs in providing for the complex requirements of the future, and the necessity of embodying the best and most modern principles of construction in their designs, he suggested that the students should occupy their leisure with some handicraft, such as modelling, carving, or enamelling. By so doing it would increase their sympathy with the craftsman, and would give them some idea of the difficulties he had to combat. It would also stimulate their own susceptibilities, and increase their knowledge of the possibilities of the materials in which the craftsman worked.

They would then become better enabled to give expression to their work. And he thought that one of the most fundamental principles of their art was to give expression and life to their work. They could define the meaning of the terms utility and durability; it was not so easy to define the meaning of expression as applied to architecture. It was the quality that created pleasure, and was equivalent to the power that enabled the artist and the sculptor to present speaking likenesses out of inanimate material. The function of art, as described by John Ruskin, being either to please or to teach, they should therefore aim to give expression to their work.

Mr. Channon went on to say that they were living in an age of specialism, which had its advantages, as well as its disadvantages, from an art point of view; that the collaboration of the architect, sculptor, and painter was at the present time receiving considerable attention, and that their work was both desirable and attainable in their buildings.

Quoting Sir William Richmond on this subject, he said: "The great men of the past were rarely specialists. Everyone knew that Giotto was painter, sculptor and architect; so was Raphael, so was Brunelleschi, so were Michael Angelo and Leonardo. Phidias was the son of a painter, and was educated in the craft. The fact that we were living in an age of specialism made it more than ever necessary that architecture, the mother of the arts, and her children should grow up together, and that there should be more sympathy and union between them."

He alluded with satisfaction to the proposed formation of a School of Architecture in Leeds, which he thought was a step in the right direction, as was also the one in connection with the Architectural Association in London. He dealt with matters of local interest, and the necessity for the careful preservation of ancient and historical landmarks in their midst.

Referring to the work of the Institute and Allied Societies, mention was made of the action taken by the Northern Architectural Association, which would doubtless be an inestimable boon to students. The Hon. Secretary of that Society a short time ago wrote to all the free libraries in Northumberland and Durham and asked them to obtain for circulation the books mentioned in the list recommended to Students by the Royal Institute of British Architects. In most cases the request had been readily complied with; and the President recommended them to adopt the same course of action in York.

The President then offered some instructive and practical remarks on the planning and construction of fever hospitals, this subject being the one that had been before the students during the year. He referred them to the excellent paper by Mr. Aldwinckle, published together with the plans, in the JOURNAL of the Royal Institute of British Architects; quoting therefrom, he said: "Infectious diseases may be regarded as an invading and powerful enemy, ever ready to enter the dwelling or city, and cause widespread ruin and destruction."

"Past history," continued the President, "tells us only too forcibly how powerful and destructive this enemy had been, in times happily gone by, when its inroads were unchecked by the fortifications of medical science and legislative provisions, and that it was well within the province of architecture to lend her powerful aid in the researches of medical science in this defensive war against a common foe. As Sir Douglas Galton says in his book on Hospital Construction, 'Cleanliness and fresh air do not so much give life, as they are life itself to the patient. Cleanliness, clean air, clean water, clean surroundings, and a fresh atmosphere are the true safeguards against infection; segregation by ample floor and cubic space, ample ramparts of fresh atmosphere rather than by segregation by walls and divisions. You cannot lock in or lock out the infectious poison; you can air it, diffuse it, and clean it away.' Too often the provision of such hospitals is put off until some infectious disease is immediately threatening, or has actually invaded a district. It cannot be too clearly understood that an isolation hospital, to fulfil its proper sanitary defence, ought to be in readiness beforehand. During the progress of an epidemic it is of little avail to set about hospital construction, the mischief of allowing infection to spread from first cases will already have been done, and this mischief cannot be repaired."

At the conclusion of his address, Mr. Channon presented the prizes to the students, the subject of competition being "A Design for a Small Fever Hospital." The drawings placed first in order of merit were by Mr. J. O. Thompson, and the second by Mr. D. Harvey.

An interesting discussion followed, and the customary votes of thanks closed the meeting.

USUI·CIVIUM·DECORI·URBIUM

THE PRINCIPLES UNDERLYING THE HANDICRAFT MOVEMENT AND THEIR INFLUENCE ON ARCHITECTURE AND DECORATION.

By R. G. Hatton,

Head Master, Art Department, Durham College of Science, Newcastle-on-Tyne.

Read before the Northern Architectural Association, Newcastle-on-Tyne, 10th December 1902.

MANY reasons can be given for the revival and encouragement of Handicraft. Some are political, some economic, some ethical, some artistic; but with most of these we have nothing to do now. Moreover, the word "Handicraft" is not the same as "Hand-labour;" and the advocates of the former are not necessarily advocates of the latter. Therefore the advocates of handicraft are not prompted by a sense of opposition to machinery, as such, but only when and where its use involves a loss of some quality or character essential to the work undertaken. They maintain that every work which should, or can, have an artistic character must be produced by the hand alone. Mere labour, they might admit, may be supplied by machinery, but they would be very watchful that the facility of machinery did not influence the designing of their objects.

When, and to what extent, to use machinery handicraftsmen would determine, as all artists determine everything, by feeling. He who has not the gift of feeling, and is not so sensitively endowed that he can discern when the artistic outflow is being interfered with, is not fit to be an artist, cannot in fact be one, and will fall into error after error. To such persons the principles of art are nothing, though they read all manner of text-books, and study assiduously. For to produce art an artist is required, and he is so sensitive to artistic right and truth that he needs no rules as to how he shall do things and whether he shall or shall not use machines.

The objection to machinery urged by the handicraftsman is that it is clumsy. With all its delicacy of construction, and all its accuracy, it is clumsy. That is to say, it can only perform certain tasks, and is not responsive to changes of thought or to subtleties of thought. It has to be re-set for each separate task; and though it will not deviate a hair's breadth from the course laid down for it, neither can it be persuaded to do so if such a deviation be desirable. But the chief objection to machinery is its habit of repetition, and repetition is abhorrent to the artist, who knows that conditions and requirements are not repeated, except rarely, and therefore that form should follow the same law. The artist, too, recognises that, though conditions and requirements sometimes are repeated (as in the six chairs in one's dining-room), it is pleasant if the *thought* can vary, even ever so slightly. Such slight differences between things presumably alike are of very great value. After all, it is such slight variations as these that make things interesting, or, to put the fact another way, it is in them that the interest and beauty of things lie.

If it were not for these slight variations, which the artist regards as essential, it might be thought that works of beauty could be produced somewhat thus :—Having made the design, or the pattern, and brought it to perfection, set machinery so that repetitions can be obtained. It might be urged, though erroneously, that such a proceeding is justified by classic tradition. Classic tradition, that of the seventeenth and eighteenth centuries, bids one first obtain good form in design, and then get it built up, somehow, anyhow, with no particular regard for conditions or materials or construction. But the law of this classic tradition never worked in practice. There were always matters to be solved, for the occasion, by the architect, and he in so doing expressed his choice and burst the bonds of his formula. The concentration upon the perfection of form which this classic tradition imposed did certainly much good, educationally; while the stateliness of the general design counterbalanced, and indeed outweighed its frigidity.

Towards the end of the classic period in the early nineteenth century, the machine was making itself too much felt. It was not so much that machine-made things were getting very numerous, as that a mechanical way of looking at things was arising. Harm is done, not so much by the actual machine as by the mechanically-minded person, whose ideal way of thinking, or of doing anything, is that which might be compared with the neat construction and sure, unemotional, movements of a machine. It is against this mechanical way of thinking and feeling that the artist rebels.

The mechanical habit of mind tends, first, to repeat in one case what has been done in another; secondly, to a recognition of only the salient characteristics of things, and a consequent neglect of their detail; and thirdly, it expects speed, which it regards as the real test of smartness and efficiency. Small wonder need there be that the artistic handicraftsman rebels. He does not carry the peculiarities of one case into another; he strives to unite salient characteristics with details; and, above all, he knows that the artistic worth of his work is in proportion to the labour and thought spent upon it, gratuitously, as it were, for no other purpose than to endow the object with personality. How can "the trade" ever produce works of art? Ever quickening the output, specialising its workmen, speculating for the taste of the purchaser, the trade leaves no time for that quiet thought which produces fine things.

If what has been said above be true, there is small wonder that the decorative works of to-day show marked individuality. Possibly, indeed, the individuality is not very real, and savours somewhat of advertisement; since the odd kind of thing attracts attention, and, if well done, looks wise. But besides this superficial, there is that subtler individuality, which is rather evidence of a human personality having had to do with the work than a decided pronouncement of temperamental difference. Indeed, the handicraftsman is not particularly anxious for fame cheaply won by odd and extravagant productions. He knows that ultimately his choice will have its say, and will give an individuality to his work, though it, in style, does not greatly differ from his neighbour's. He knows that true originality is seen rather in personal handling than in the pursuit of some new, some heretofore unseen, fancy.

In this and in other matters the handicraftsman differs from him who produces specimens of the "New Art." Growing up side by side, the New Art and the New Craftwork seem to have much in common. They are, however, more different than similar. In the New Art there is odd, strange fancy, giving a kind of originality which is more novelty than the expression of human thought or passion. In the New Craftwork there is rather a reverting to early types, because those early types set the designer free to put thought and passion into his work. The New Art has no sympathy with material; it uses wood and stone as mere useful or gorgeous substances, and cuts them into any form fancy directs. The New Craftwork respects material—insists, indeed, upon it, since it values the breath of Nature which material brings with it. As to construction, the New Art derides it, and makes everything subservient to the design, however odd; while, on the other hand, the New Craftwork seeks to keep as closely as possible to simple construction, since it believes that, to the mind, there is a satisfaction in seeing and knowing the construction of things. Again, the New Art abhors Nature; it ransacks the universe for "suggestions," but merely because its jaded perception seeks the novel. On the contrary, the New Craftwork delights to picture the natural forms it loves, caring rather to try again and again till the due expression of peculiar growth or peculiar form is rendered. The curves, too, used by both are of very different classes. A sensitive eye will always demand that a curve have some kind of growth; that it follow some law of beginning and ending, some law of relation of curvature to distance, some law of the succession of curve to curve. In the New Craftwork we have curves that follow such requirements; in the New Art we have curves that wander in an aimless fashion. Again, the sensitive eye demands in the association of forms some regard for their positions, some sense of weight, of power of support, of thrust and equipoise. To all such considerations the New Art turns a deaf ear, while the New Craftwork obeys. Finally, in the New Art there is a desire for the luxurious; there is the doing of things for luxury's sake. In the New Craftwork, on the contrary, the aim is the ennoblement of plain, simple, homely things, and every addition is not for luxury but for the expression of real idea and thought.

In many ways the New Art is similar to the *rococo* style of the early eighteenth century—the lack of weight (in both styles the capital and base are handled freely, as is also the column), the contempt for material and construction, the insistence on skill, the neglect of detail (however highly wrought), are characteristic of both, and as the one finds its final home in the theatre, so the other does in exhibition buildings.

The New Craftwork has been accused of rudeness, roughness, as if it "were made in the forest;" its rivets, nails, and pegs are derided, and its occasional childish decoration openly laughed at. It must plead guilty to these excesses, and must defend itself by protesting that it was feeling its way. It was feeling its way away from the stupid traditions of the mechanical system. It reverted, consequently, to primitive types, and tried to think the whole problem out afresh. It soon saw that a great deal of the decoration in vogue was meaningless, that it did not give pleasure, that it was mere showiness. Decoration had become a mere extra gaudiness flooded over buildings and objects of all kinds, and was, as it were, the accepted and appropriate garb in which "better-class" things were exhibited. The same vain expenditure of money and labour still goes on; the New Art will not alter matters, it will merely substitute one style for another; it is from the principles underlying the recent handicraft development that help is to come. These principles are the old principles of the historic periods, and their revival in handicraft is due chiefly to the fact that boxes, chairs, bowls, and carpets can be more readily made, and, if failures, cast aside, than buildings.

The handicraftsman starts with a careful selection of his material. The better his material, the less he will have to do to it to make it pleasant to the eye. Next, he considers the human need which his object is to supply. He makes all he does as convenient and as handy as possible.

To supply needs he sees no necessity for other than simple construction, and, having it, sees no reason for departing from it or hiding it. For he finds he can make his objects beautiful under the conditions he has imposed upon himself. He knows, too, that to make his object beautiful he has first to attend to its "personality," and to gain this he must carefully consider proportion. If he but fastidiously adjust the proportions of his object he may secure a beautiful object without any decoration whatever. Often, however, he will find a mere line, a narrow band of simple ornament, a change of colour necessary, and sufficient for rendering his work united into a personal whole. The handicraftsman knows, then, that the more beautiful his object is when plain, the more satisfactory it is. He can then, if he will, proceed to further decoration.

He has, however, the right to make his object more ornamental by that modification of the parts during the making which has always been carried on. Timbers need not always be square, nor straight-edged. The square can be made octagonal or round where it appears appropriate. Notches may be cut; perforations made; the form carved into a less geometric form, as the head of a fiddle is; mouldings can be run on, but the handicraftsman is opposed to planting on mouldings, for he deems the process one which leads to thoughtless decoration, and to the too frequent use of mouldings where other forms of decoration suffice.

If the handicraftsman proceed further with his decoration, he confines himself to very simple forms—the wavy or zigzag line, simple leaf forms, simple animal forms, heraldry and lettering. He knows that it is folly to employ complicated forms which he cannot handle. He knows that the very simplest elements suffice to exhibit taste, and that all ornamentation depends upon the tastefulness with which it is rendered. The fault hitherto in the training of designers has been in the pursuit of novelty, of new ideas, whereas what is alone to be expected is the evidence of fine taste and breeding; and this can be exhibited in a style common to many people.

In the old days the workman was his own designer. No one surely is prepared to assert that the Gothic carvers worked from other men's designs! But they did not have to work in different styles, which means that they applied themselves to their own, knew it, and could exhibit taste in it. Nowadays many workmen execute their own designs. But the times are evil; the workmen have to work in different styles, of which they know indeed very little; facility and speed are everything, taste is nothing; the workman's work is never really looked at, it is only part of the assertion of opulence and is itself never cared about. With a reversion to a simple style, one in which the workman can feel his way to individual expression, and in which he no longer repeats the formulæ of other times, he will be able to design simple patterns, and to make them evidence of intelligence and choice on his part. I am aware that there are designers who deny this, but I have myself been able to get it done. The chief designer has, then, merely to determine that here or there he will have a band of this or that ornament, knowing the men who execute it, and what they will do. To the advocates of handicraft everything depends upon those who carry out the decoration, simple or important. The ornament must always be executed by men who know exactly in what delicacies of form the beauty of the work resides. Unless this is the case, the decoration becomes insipid and valueless; and, moreover, since it cannot be isolated (being not worth looking at), it can only be used in extended quantities, defending its insipidity behind its confusing abundance. Hence the designer is committed to a style which dare not be simple. The advocates of handicraft contend that it is no disgrace that a man can execute but one kind of ornament, provided he do that well. Surely, such was the case in the past.

While many workmen may thus be able to execute the simpler portions of the ornamentation, others of higher power will supply the occasional jewels of interest which will be disposed here and there upon the building, or object, by the architect. The architect presides over the design of his whole work as does the craftsman over that of his small object. For one thing, he considers his building all round, and, though he surely puts his jewels where they will be best seen, he will not bless the façade and curse the rear as he does at present. He will attend to the human requirements; he will first dispose his proportions fastidiously; he will obtain for his building personality and interest by his occasional bands of ornament or by developing the legitimate structure he adopts; he will have good material, worth looking at, but not mere expensive stuff vulgarly made a show of; he will not hide the figure or grain of wood if he find it good to see; he will have a real love of colour; and he will see that, back and front, his building has the touches of carefulness, and taste, and thought, which alone render houses pleasant. Finally, I imagine, he will do one thing which the handicraftsman is not, as a rule, called upon to do, he will make the aspect of his building acceptable to the whole people. He will, that is, seek that dignified feeling which comes of the consideration of the general ideas of the town or nation. He will not, to put the matter another way, allow mere personal idiosyncrasies to assert themselves when the interest must be chiefly general and not personal; he will build for more days than one, and attune his work to the tread of time.

SOME POINTS OF INTEREST IN OUR OLD CHURCHES

By WALTER MILLARD [*A.*], *Pugin Student* 1879.

Read before the School of Art and Science, Andover, Hants, 11th December 1902.

IF the remarks I have to make should prove to consist less of what I actually know than of what I *want* to know about old churches, I can only trust that, even so, they may still turn out to be not wholly profitless if they do but serve as an incentive to others to want to know and to appreciate some of the points of interest in our old churches.

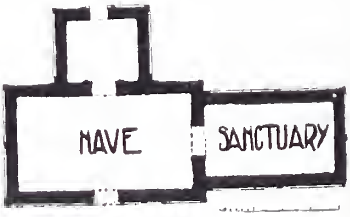
What I want to know about an old church when I come to it—be it large or small, complex or simple, dilapidated or smartened up—is what I would describe as its life-history, the whole story of the thing, nothing less. I want to read the structure; as it were a chronicle in building-work extending back for centuries; as a chapter or a series of chapters in the story of the community in compliance with whose needs and aspirations the whole work was called into being, and from generation to generation has been handed on, with variations made in it, from time to time, of trifling extent or of considerable importance—as the case may be—down to our own day. I want to see in the fabric the process of its making, from as early a date as possible, from the very beginning, if I could, until now; to get in my mind's eye a clear, comprehensive, and continuous view of it, all along the course of its existence through the centuries. The complete attainment of such a view may, indeed, be beyond the limits of possibility in most instances—perhaps, in any instance; yet, nothing less than full knowledge can ever be set up as a supreme aim by the student who wants to know. Short of full knowledge, however, the attainment of even a limited and indistinct view into the life-story of an old church may amply repay one; and unexpectedly, too, owing to the possibility of any example casting some light by which yet other examples may be more clearly read, and thus one little corner the more be lifted of the veil that still, in a great measure, covers the true history of our mediæval church architecture.

When I say I want to see in the fabric of an old church the process of its making, I mean that I want not merely to be able just to note the fact that one portion perhaps of the structure shows work of one period and another of different time, to put my finger in detail on various forms and features about the building, and pronounce them to be of various dates respectively, or to call them by certain names; I want to get a glimpse beyond all this, back through whatever changes may have passed over the building from first to last—reading from last to first—until I can see or at least surmise what was the design first carried out; and seeing this, even dimly, to thereby realise better the significance of the existing forms and features grafted and grown upon it. I want to get behind the obvious facts that now present themselves, and, by drawing conclusions from these, to make out more than is apparent on the surface; I wish to gather what I can of the vital facts underlying the thing, forming the very groundwork of its life-history, which I want to read as a whole.

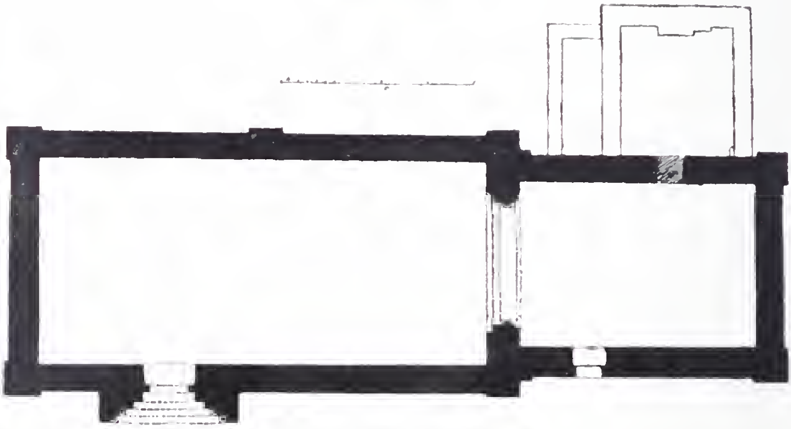
The particular knowledge of architectural forms which enables one to pronounce decidedly that a church doorway, say, is Norman, that the capitals of the nave arcade are certainly what you may call Early English or Decorated, as the case may be, even if you cannot date them, and that the windows are obviously Perpendicular, from their tracery alone, is not to be despised so long, at any rate, as it leaves you unsatisfied and merely anxious to use it as a means by which to delve deeper towards the roots. To really understand an old church you need so to apply this knowledge as to get to see the relationship of the various facts disclosed by it, to note their true sequence, and thereby to grasp the course of the building's story gradually developing as time went on. If, for example, we can determine, from the internal evidence of the work itself, that a particular church consists of various parts of various dates, it follows that a building most probably stood there of at least as early a time as that of the earliest portion existing of the work we can assign a date to. This building, when complete, must have differed from the one we see now; since, by the differences in the work, we have distinguished the various parts from one another. How it differed—in shape, size, or character, if not in all three respects—is one of the chief secrets of the story. Failing internal evidence on this point, let us turn to making comparisons with other churches showing work of the same early date. In these we may, perhaps, find still extant parts corresponding to those we miss in our subject. This, of course, is not conclusive evidence; but, evidence of the sort of thing done at a particular date is very often good enough to lead to actual discovery that might never have been made without it. Having once got some notion as to what the original building was, or might have been like, our view of its subsequent history begins to clear. It becomes easier then to see in what order the various parts of various later dates took shape in turn and came into their places in the structure as a whole.

Leaving out of consideration, as I must, our great churches of cathedral, collegiate, and monastic foundation, I propose to confine attention to our parish churches only, most of which lie in country villages, though the towns contain many of the larger and finer examples. In the structure of these parish churches, varying considerably in size and importance, but all possessing numberless points of interest, may be traced to-day many and many a page in the history of architecture in England; in not a few of them individually quite an epitome of it, for some 400 years, may be read by such as learn to decipher the chronicle written in stone and wood.

The simpler the building the more easily, as a rule, shall we be able to make out the main lines of its story. Some few churches yet remaining to us from early days have undergone surprisingly little change in their general outlines or plan; the circuit of their original walling being still intact, though, of course, roofs and exposed upper features have been renewed, more than once perhaps; and minor alterations, too, may have been made, such as the enlargement of window openings. Of these few churches the little pre-Conquest edifice dedicated to St. Lawrence at Bradford-on-Avon, apparently quite unaltered in its main lines, is as good an instance as I can mention. That at Adel, Yorks, of the second quarter of the twelfth century, is another typical instance. Such complete examples showing their original form are particularly precious, as preserving for us authentic specimens of the building design of their day. They indicate to us in a general way what other contemporary works might have been like, and thus may help towards the decipherment of many an obscure point in surviving buildings of their own date which have not happened to escape subsequent material alteration.



ST. LAWRENCE, BRADFORD-ON-AVON.



ADEL CHURCH, YORKS.

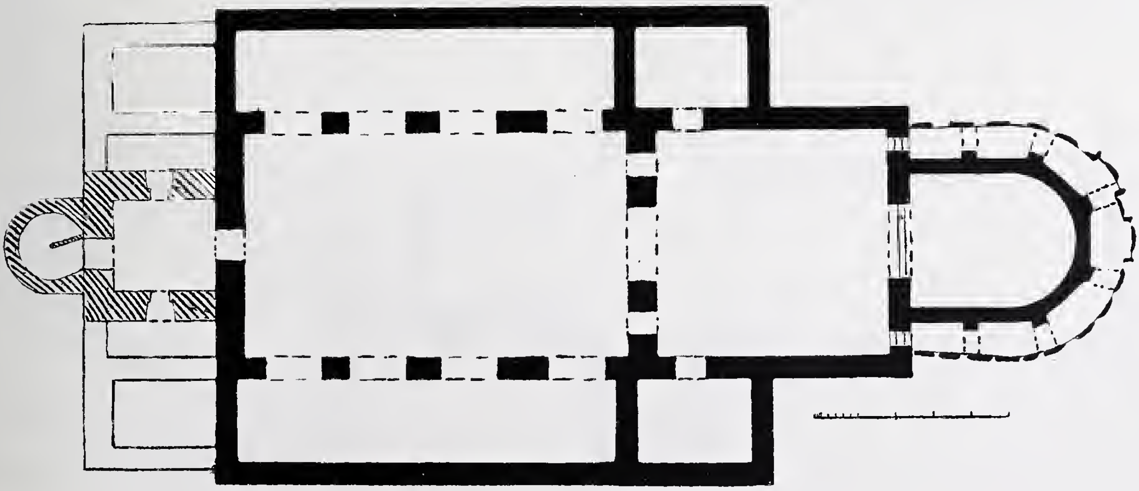
I would observe that the unenlarged condition of an early parish church would seem to point to an uneventful history of the community for whom it has served all along; whilst an enlargement must surely tell of some increase in prosperity at a certain time, or, at least, of some new need having arisen. The building itself may thus throw a side light on the general history of the parish.

But these comparatively untouched churches of early date, usually of small size, are quite a trifling minority among the old churches of our land, numbering some thousands. The vast majority did not come up out of the ground designed all complete as we see them now. They had to grow into their present shape by a process of expansion, more or less extensive according to circumstances, from their first simple plan. It is surprising how slight, even yet, is the general recognition of this ruling fact. In many of them the expansion takes the form of an aisle or aisles tacked on alongside the original aisleless nave; which still remains, not indeed in its entirety, but nevertheless to a sufficient extent to be detected quite clearly; even if it should have subsequently received yet further addition, either by lengthening in itself, by a rebuilding of its chancel on a larger scale, by the erection of a western tower—followed, perhaps, by an upward extension of the church in the form of a clerestory—or by all of these together. In such a case, which is common enough, we might say, "the head, legs, and part of the body have been added—the rest is the original structure." But, even still more common perhaps are those cases in which the building has passed, in the course of its long life, from the day of its foundation onwards, through such a succession of overlapping changes by way of extension, reconstruction, and remodelling of all its parts in turn, carried out piecemeal at all possible dates, that its first form has become obliterated entirely, and can now only be inferred from stray scraps of evidence and by comparison with analogous instances elsewhere. Yet, without this original form as a nucleus to expand from nothing that we now see would have been quite as it is. Here we might say, "The head, legs, and the whole of the body have been renewed—all that remains of the original structure is its influence." And that often means a great deal. It may, indeed, be the governing factor throughout. In such an instance the building has, from perhaps a comparatively small, or even humble, primitive form, passed steadily through the whole series of structural changes that our churches were constantly liable to down to the middle of the sixteenth century; probably without involving any actual stoppage of public worship within its walls from first to last. "Services as usual during alterations," might often enough have been a fitting notice to put up.

Then, whatever the previous story of the building, in the middle of the sixteenth century it fell on evil days and was stripped and plundered. Nevertheless, it survived, and has virtually never ceased to serve its original purpose of a parish church. The continuity of its existence as the people's church structure has remained unbroken all along. Such in brief—very much in brief—is, approximately, the story of the average parish church in this country.

Haphazard as the course of development I have spoken of may sound, it was not so in reality. There was a method and a regular sequence in the process that can be recognised as common throughout a very great number of examples. But I will no longer ask you to accept my unsupported testimony on this and other points concerning our old churches. The growth of the English parish church has been explained so clearly and tersely by Mr. J. T. Micklethwaite,* in whose care as surveyor the fabric of our abbey church of Westminster now rests, and he speaks with such authority on this subject that I make no apology for quoting, in paraphrase, from what he says.

"As the Church of England traces its origin to the ancient British Church and to the Roman Church, so the buildings also show evidence of derivation from two sources. In Ireland and in a few cases in Scotland, which was Christianised from Ireland, there are early churches consisting



BRIXWORTH, NORTHANTS.

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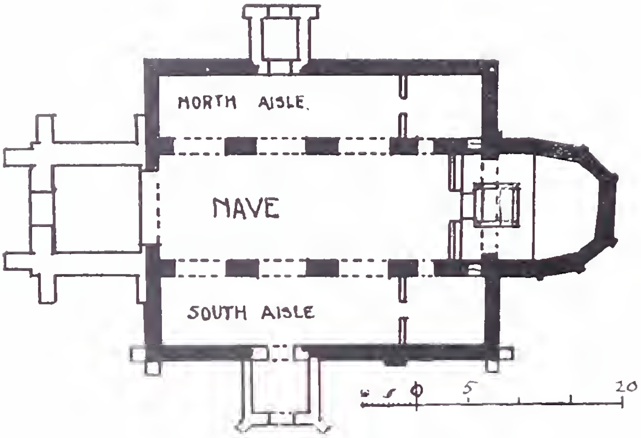
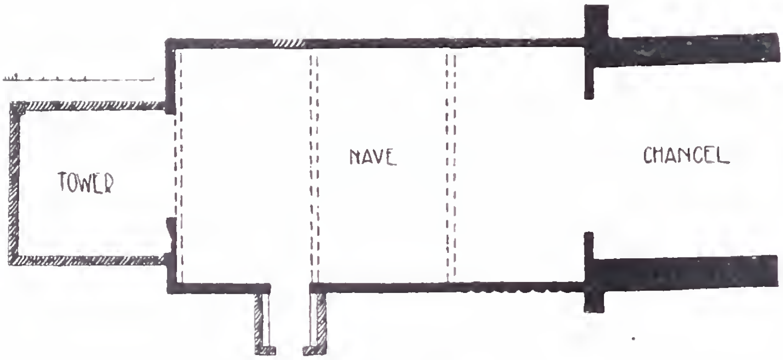
* *The Archæological Journal*, vol. xxxvii. p. 364: "On the Growth of English Parish Churches," by J. T. Micklethwaite, F.S.A.; and vol. liii. p. 193: "Some Notes on the Study of Old Parish Churches," by J. T. Micklethwaite, F.S.A.

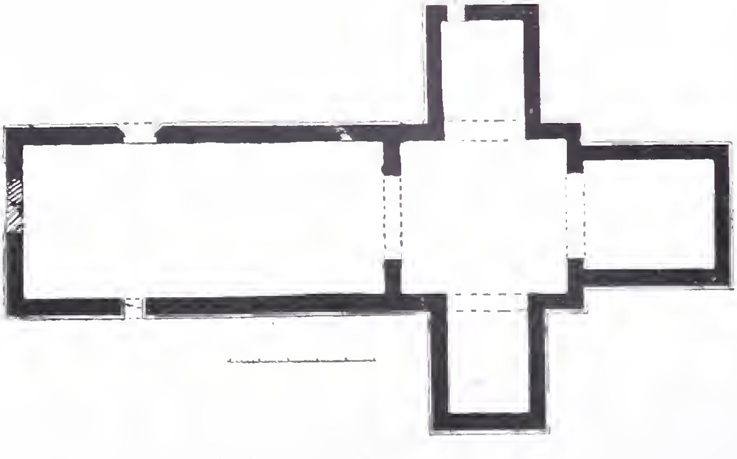


WING CHURCH, BUCKS.



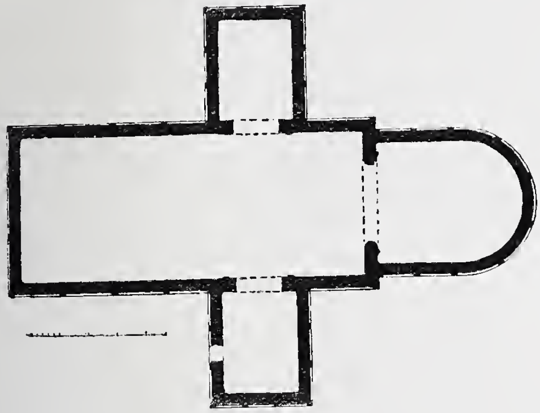
GREENSTEAD CHURCH, ESSEX.

of just a nave and sanctuary—with a very narrow arch opening from one to the other—and always with a square-cornered eastern termination. This represents the form of ancient British churches, and from this form the English parish church has mainly developed. Augustine brought in the Roman type of church building, which became the model for monastic churches. This type of church had side aisles, involving arcades—*i.e.* rows of arches on columns or piers—a clerestory above these arcades, and an apsidal, eastern termination, semicircular or semi-polygonal in form on plan, generally with its floor raised over a crypt or 'confessio.' At Brixworth, Northants, we have one of these churches remaining, built under the influence of the Roman missionaries—the Canterbury influence, so to speak. At Wing, in Bucks, is another that may be mentioned. Whilst the monks were raising great churches, the people were erecting small ones for their own use. These became the parish churches, and so numerous were they that I believe," says Mr. Micklethwaite, "that, except in large towns, there were few parish churches at the beginning of the nineteenth century whose sites were not already occupied in Saxon times." Think what that means. It means that there are few of our country churches which are not in their fabrics direct, lineal descendants of pre-Conquest originals, portions of whose structure they may even yet embody, and are known to do so for certain in a fair number of cases. "We know little of their history," says Mr. Micklethwaite. "The abbeys seldom wanted their historians. Of Saxon churches many, we know, were of wood, such as the surviving example at Greenstead, by Ongar, in Essex; and of the stone ones later re-buildings have altogether wiped out a vast number. Nevertheless, traces are numerous, and a few examples are virtually complete—*e.g.* Bradford-on-Avon and Escomb, Durham. These are types of what was once common. Their aisleless, square-ended form survived the Norman Conquest, and, till the end of the twelfth century, was the normal type of our smaller parish churches. It is Celtic in origin or, if not exclusively so, at any rate not Italian." Adel Church is a Norman rendering of it. "But, side by side with this Celtic, or, at least, non-Roman type of building, we find churches with elements derived from both sources; for example, the pre-Conquest churches at Dover, on



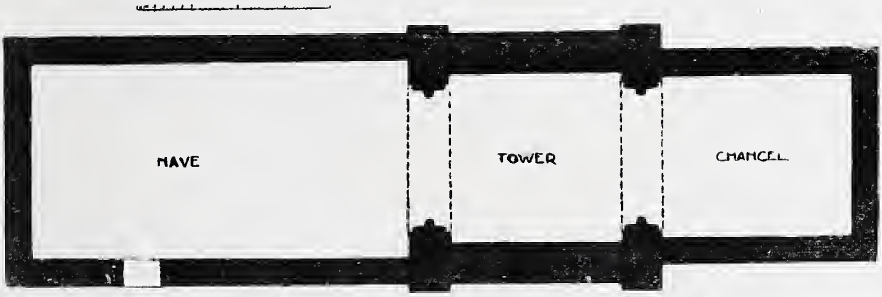
CHURCH ON THE CASTLE HILL, DOVER.

the Castle Hill, and at Worth, in Sussex, both with transepts and the latter with an apsidal east end."



WORTH CHURCH, SUSSEX.

That at Dover, I would remark by the way, affords also one of the earliest instances in this country of the central tower, the lantern over the middle of the church, which was soon to become so distinctive a mark of our larger monastic and cathedral church edifices. "The Normans," says Mr. Micklethwaite, "brought in a strong passion for building, so that in a little more than one hundred years from the Conquest there were built not only a vast number of large churches, for newly-founded abbeys, but then-existing churches, both regular and secular, were rebuilt throughout the land. Ordinarily, too, the Normans, unlike later builders, seem to have pulled down structures entirely and rebuilt afresh." This, I would suggest, as masons coming from a country of fine building stone, they might be expected to do in the case of wooden churches—of which we had a number. At any rate, in many districts one meets with Norman handiwork in church after church across the country in steady succession, showing how brisk our building trade must have been in the first half especially of the twelfth century. "Accordingly," says Mr. Micklethwaite, "whilst making allowance for the certain number of pre-Conquest buildings which then escaped rebuilding, we find, as a matter of fact, that the great bulk of our present churches have grown from twelfth-century originals. Three chief types of Norman plan are to be noticed: (1) that of simple nave and sanctuary"—the "Adel" type—out of which most of our smaller churches have grown into their existing form; (2) "that of nave, chancel, and transepts with a central tower over the 'crossing'"—the "Dover" type as I would call it, out of which most of our larger churches and cathedrals have grown; (3) "that of nave and chancel with a tower between them, over the middle of the church, but without transepts," known as the "Iffley" type, from the church of that plan near Oxford.



IFFLEY.

"The key to the history of a mediæval parish church," says Mr. Micklethwaite, "is the fact that it never ceased to be used. Thus, the most extensive works were always done piecemeal. Some churches ran through the whole course of their development in a few years, others took four centuries to do it; some"—like Adel—"never started at all, and others went only part way. The fabric will generally tell its own story; where a chapter is wanting it is generally easy to supply it from what we have learnt in other places. The normal order of growth was seldom departed from. The first step in the process of expansion from an aisleless form of plan would be the throwing out of an aisle, usually on the north side, where fewer graves would have to be disturbed. This would take place, as a rule, before the end of the twelfth century. Then, if further need arose, a south aisle would follow, perhaps immediately, or after some interval of time. Anyhow, these aisles would be built one at a time, in order to minimise disturbance to the church, which would be in daily use. On seven days in the week it would be wanted—and they couldn't do without it. All attended church who were able to, there being no alternative places of worship. Early aisles were usually narrow compared with later ones; so that if some time elapsed between the building of the north and of the south aisle of a church the latter will most likely be found the wider; unless, by the way, the former has itself undergone a process of widening subsequently to its first erection—a not uncommon occurrence. By the time the nave had received its aisles the originally aisleless chancel had very likely been lengthened or entirely rebuilt in an enlarged form—an apsidal termination, in some cases, disappearing in the process—and in time this chancel, too, might throw out an aisle or aisles. When large, these are generally to be accounted for by a guild or a chantry bequest. A guild might erect for themselves a chapel in the form of an aisle to the chancel. The lord of the manor might build his private chapel, as another aisle, in which he would have his seat, and then his tomb, masses being said here for the repose of his soul. Meanwhile, the question of a tower for the church would have been settled in all probability. When an early twelfth-century church was to be one of more importance than the simple nave and chancel plan—the "Adel" plan—would afford, they seem to have nearly always designed and built it according to what I have called the "Dover" or the "Iffley" type of plan, that is, with a tower over the centre; where, in many cases, it has remained ever since. This is a good and convenient enough plan until the church calls for enlargement. Then, when you come to tamper with the abutment of any one of the four arches carrying the tower, trouble begins. "But, though in the twelfth century the church tower was usually a central one, in nine cases out of ten," says Mr. Micklethwaite, "it is now at the west end of the building. A few pre-Conquest west towers remain and a good many Norman ones, but besides these the greater number of our western towers were put up where they are either because an earlier central tower had failed, as they so frequently did, or had been removed on account of its inconvenience to those who had to use the enlarged church, or because, when the parish could afford a tower at all—perhaps in the fourteenth, still more probably not till the fifteenth century—folks would rather have it built anywhere than in the middle of the church. It was an expensive luxury and took a long time to erect, so they liked, when they could, to put it clean outside, preferably at the west end in this country; and, when it had been raised sufficiently high, then to join up the church to it, perhaps by a few feet of walling, perhaps by an extra bay or so on the end of the nave." Structural evidence of this is comparatively common. "When aisles had taken away from the nave its side windows, and a western tower its west window, the darkened church began to cry for a clerestory—if it still lacked this feature—or for a heightened clerestory, if only a low one existed. This meant a new roof, of flattened pitch. It was the last stage but one in the expansion process. The final stage came when this feature, of a clerestory, was continued along the chancel also, involving in many cases the abolition of the chancel arch, whose position would then be represented by the rood screen, a feature that every parish church eventually possessed. Other screens would also serve to make the necessary and essential divisions in the church. From a non-Roman germ, of simple nave and sanctuary, the English parish church, in its final and perfected form, had now come, by a series of regular steps, to a plan not greatly differing from that brought over by Augustine from Rome," says Mr. Micklethwaite. Save, I would add, that in its eastern termination the square-cornered form, the form universal in, though not peculiar to, the early British churches, had prevailed. Herein the pre-Augustine tradition has survived in competition with the Italian, and the Roman apse had now ceased to be employed by the builders of our English parish churches.

"This story is true," says Mr. Micklethwaite, "of nearly every old English parish church more or less. A few keep the form of their first laying-out (*e.g.* Adel); others started their changes before their first building was complete. Some went but part of the way; some took four centuries to do it; others seem to depart from the general rule, when really their earlier parts have only been rebuilt. Often the evidence of the earlier state of things is not in actual remains, but in the influence of the vanished older work upon the form of the newer that replaces it. We must begin by reading the plan, keeping in mind the conditions, especially those of unceasing use of the building and strict regard for economy." *

And now will you ask, what are the points of interest in an old church, how old is it, and in what "style" is it built? Well, you see, it bristles with points of interest; it embodies traditions, if not material remains, probably as old as British Christianity itself; whilst as for its style, this is just the style of the day in which each stone of it was worked; since its builders did not build in bygone "styles" or "periods." It has been left for men mainly of the nineteenth century to try to do that, and to go about the study of our old architecture by inventing and assigning to certain developments of it certain names, and then proceeding to judge of the buildings by the standard thus set up. Imagine how the old builders would have stared to be told by some book-writer that they were working in "the pure Early English style," in "the Middle Pointed," or in "the Decorated period," in "the Curvilinear manner," or in "late and debased Perpendicular"!

It is true that with regard to these and other fancy names, devised not by the authors of the building work, but only by the authors of modern text-books about it, complete general agreement seems not even yet, in this twentieth century, to have been arrived at as to their exact application and appropriate use. I venture to hope I have succeeded in showing you that there may lurk in an old church points to be discovered of still deeper interest than those involved in the practice of just labelling each feature of it with the title of a so-called style or period—a title, too, still needing definition to be intelligible.

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* I have quoted Mr. Micklethwaite at such length in despair of doing anything better. To my friend Mr. John Bilson [*F.*], also, I am largely indebted for the substance of many of my remarks.

Ability to assign to old work an approximate date at sight, or at least to distinguish the work of each century or half-century, and, in the case of a building of more than one date, to place the various portions of work in it according to the order of their execution, is, of course, essential to the successful study of our old architecture. Still, this in itself is, after all, but a key wherewith to unlock the actual storehouse of knowledge.

Freeman said he regarded architecture as "a branch of the study of history." An old church is an historical document expressed in terms of building, with a vast deal of human interest and human nature built into it. We have seen that not in one case out of a hundred, perhaps, in this country is it as it stands the creation of any one year, of any one mind, or of just a single building operation, but, on the contrary, is a product of evolution—by the action of several minds and many hands in succession—from some more simple form of structure. This being so, how high, then, in order of interest should we count our small and simple churches, seeing that among these comparatively humble edifices we may find some few actual representatives, and a good many survivals in form, of primitive structures, from which, or from the like of which, much of our mediæval church architecture has undoubtedly developed! In studying them and comparing them we are going down towards the roots of knowledge concerning our old church architecture. It is these small churches that afford a clue to the riddle of many a large and complex edifice of later growth; and among the numerous points of interest in the later building that present themselves to our notice this clue is the point of chief interest, bearing as it does on the very beginnings of the building's story.

I have spoken of an old church as an historical document. You cannot write history, whether of architecture or of a nation, until you have read the documents—and not only read them, but compared them and mastered their significance in relation to one another—regarding individual examples as so many illustrations to the subject as a whole, not merely as isolated specimens, whilst focussing on them individually the light derived from the study of the whole subject and of the illustrations collectively. In like manner, also, must the intelligent study of the history of architecture be pursued if we are to take rank with serious students in other branches of human knowledge. "Deal worthily," says Freeman, "with the history of architecture, and it is worthy to take its place alongside of the history of law and of language."

9, Conduit Street, London, W., 10*th Jan.* 1903.

CHRONICLE.

Business Meeting 19th January.

The Meeting announced for the 5th inst. not having been held, a Business Meeting has been arranged for the 19th inst. to precede the Ordinary Meeting on that date, when the election which was to have taken place last Monday will be proceeded with [see Notice in *Supplement*].

International Architectural Copyright.

Monsieur Charles Lucas [*Hon. Corr. M.*] kindly sends the text of the resolutions on the subject of international protection for works of architecture passed at the Congress held at Naples last September. The resolutions were brought forward by M. Lucas and Maitre Georges Harmand, avocat à la Cour d'Appel de Paris, as delegates of the Caisse de Défense mutuelle des Architectes :—

1. Le congrès, rappelant, d'une part, les vœux émis depuis vingt-cinq années dans les congrès internationaux des architectes et de la propriété artistique, ainsi que dans les congrès internationaux de l'Association littéraire et artistique internationale, et rappelant, d'autre part, le Protocole de clôture de la Conférence diplomatique tenue à Paris en 1896, lequel consacre le principe de la protection complète des œuvres d'architecture,

Emet le vœu, en vue de la prochaine revision, par la Conférence de Berlin, de la Convention de l'Union de Berne de 1886 :

1° Que les œuvres d'architecture soient protégées dans toutes les législations et dans toutes les conventions internationales à l'égal de toutes les autres œuvres artistiques ;

2° Que la loi française du 11 mars 1902 qui, dans son article premier, reconnaît expressément aux architectes, sur leurs œuvres, les mêmes droits de propriété qu'aux autres artistes, soit généralisée à bref délai, et acceptée par tous les Etats adhérents à l'Union.

A further resolution, as follows, was passed at the instance of Maitre Georges Maillard, avocat à la Cour d'Appel de Paris, Reporter-General of the Congress :—

3° Le congrès recommande, dans ce but, à la Caisse de défense mutuelle des architectes et à la Société centrale des architectes français, de se mettre en relations avec leurs collègues étrangers, principalement italiens, allemands et anglais, pour obtenir dans leurs législations intérieures la protection complète de l'architecture, et notamment de faire parvenir le vœu du congrès de Naples aux commissions officielles chargées d'étudier la réforme de la propriété artistique dans ces différents pays.

The Comacine Guild.

From Mr. E. W. Hudson [*A.*]—

Apropos of the obituary notice by Mr. B. Walker, p. 90 *ante*, of the late Leader Scott, it would be interesting to have further authoritative opinions from our literary members upon her *magnum opus*, *re* the Comacine Guild (*The Cathedral Builders*), as being a matter of the greatest interest. The verification of her views would tend to allay all jealousy in claims of countries or provinces to the origin of Gothic architecture. It is all very well for experts to sweep away evidence such as is produced by Professor Merzario with a wave of the hand, and assert that he and his disciple and translator are not authorities worth notice—as I heard done lately when the subject was under discussion. Mr. Paul Waterhouse, in his review, p. 553, Vol. VI. of our Journal, says "the work deserves and earns exceptional credit," though I do not understand that he entirely accepts the lady's views in full. De Quincy seems to have entirely accepted such views, so far as made known in his day. We know that Benedict Biscop in the seventh century had to send to France for masons to erect his churches at Monkwearmouth, and it seems clear that he must have applied to some guild such as the Comacine, which was already established in that country, and, further, that none such existed in England at the time, where a poor imitation of Roman work was the only vogue, and where churches were to a great extent erected with Roman materials from destroyed edifices. I do not lay stress on the *intreccio* being a distinctive badge ; but if it be merely a development of very early basket-work, as found among remains of primitive dwellings, &c., it does not weaken the claim made for the existence, work, and influence of the guild

I hope to see some reasons given by the sceptics for rejecting the idea, which seems to resolve so many doubts, and be more logical than the spontaneous generation theory.

REVIEWS.

ENGLISH WOODWORK.

English Interior Woodwork of the XVIth. XVIIth, and XVIIIth Centuries. By Henry Tanner, Junr. Fo. Lond. 1902. *Price* 36*s. net.* [*B. T. Batsford*, 94 *High Holborn.*]

Twenty years ago or more, a well-illustrated volume bearing the title of "Scottish Woodwork of the Sixteenth and Seventeenth Centuries," by Mr. John William Small, of Edinburgh, was welcomed and received with much interest by the architects and architectural students of that now far-off date.

Ten years later appeared another book of drawings entitled, "Specimens of Antique Carved Furniture and Woodwork," of which Mr. Arthur Marshall, of Nottingham, was the author and draughtsman. Both of these works were largely composed of illustrations of furniture, but both contained some examples of architectural fittings of a more permanent structural character—doors, screens, wall-panelling, and chimney-pieces finding fitting representation on their pages.

The interval which has since elapsed has witnessed the publication of other works of great value by Gotch, Blomfield, Belcher, and Macartney, treating upon the architecture of the Elizabethan, Jacobean, and Georgian periods, in which woodwork has received its due share of attention; but it is stated that no volume hitherto has been devoted exclusively to the systematic illustration of English interior woodwork, considered as distinct from furniture.

To fill up this vacancy Mr. Henry Tanner, jun., an Associate of the Institute, has written and illustrated a most interesting and excellent work, bearing the title, "English Interior Woodwork of the XVIth, XVIIth, and XVIIIth Centuries," which has just been issued by Mr. B. T. Batsford, of High Holborn.

This, we believe, is Mr. Tanner's second appearance as an author, and the volume under review has rapidly followed the admirably-illustrated monograph on Inigo Jones, for which Mr. Tanner and Mr. H. Inigo Triggs were jointly responsible. The book is attractive in its outward appearance, and is presented to us in folio shape, bound in linen of an artistic shade of colour. Leaving externals, and passing to the contents of the interior, which more immediately concern us, we find they consist of fifty full-page plates, which are preceded by a short introductory historical sketch and brief critical descriptions of the subjects of each of the illustrations. It is, therefore, as a book of drawings of English interior woodwork that it has a particular claim upon our notice.

The period covered is extensive. Commencing with the highly ornate and elaborate work of the reign of Elizabeth, with its picturesque blending of mediæval and classical forms, its strapwork arabesques and general redundancy of ornament, we pass on to the slightly more restrained conceptions of the Stuart period, and, following some examples bearing witness to the influence of Inigo Jones and a more correct appreciation of classical proportions, we finish with some interiors owing their design to Sir Christopher Wren and their characteristic note of richness to the genius of Grinling Gibbons.

The subjects selected for illustration are well chosen, and typical examples of the various periods are included in the series. Although some of them may be familiar to us, and sketches and photoprints to represent them may have been previously included in other architectural works, a large number have the advantage of novelty, and all have been carefully measured and drawn by the author.

To enhance its value as a practical work of reference, the drawings include sections of the architectural features, contours of the mouldings, and details of the ornamental carved work, set out to a large scale.

Moreover, in some cases the entire treatment of an apartment, with its wainscotting, doors, chimney-piece and window fittings—the parts which, judiciously proportioned and combined together, produce the desired unity of effect—is fully represented, and to adopt the words of the prospectus, "the value of such illustrations as a study in proportion and fitness is considerable."

In the work on Inigo Jones previously referred to, the Double Cube Room at Wilton is thus treated, and in the volume before us may be mentioned instances such as the drawing-room at Broughton Castle, the dining-room of Thorpe Hall, Peterborough—designed by Webb, the pupil of Jones—the drawing-room of the President's Lodging, St. John's College, Oxford, and the Chapel of Hampton Court Palace.

The Colleges of Oxford and Cambridge furnish their due quota of material. From the former ancient haunt of learning, in addition to the woodwork from St. John's, Wadham College is represented by the beautiful ornamental screen in its dining-hall, the throne and stalls of the Convocation Room are illustrated, and the library of Merton contributes a rich example of panelling.

The subjects selected from the sister university on the Cam are of equal interest. From Pembroke College Chapel, designed by Wren—whose pedimented gable end and cupola form noteworthy architectural features as viewed from Trumpington Street—details of the picturesque little organ-case are provided; some exquisitely-carved woodwork by Gibbons from the library of Trinity is shown on Plate XLII., and other interesting examples of interior fittings are given from Clare, Peterhouse, and St. John's.

The beauties of Haddon Hall, the happy hunting-ground of lovers of the picturesque, have often been delineated. Familiarity does not, however, breed satiety. It is a pleasure to renew our acquaintance with its spacious panelled rooms, and to note again the richness of the decorative work of the Long Gallery, with its heraldic devices and profusion of carving. Simpler in character is the treatment of two of the rooms in the Entrance Tower, in which the panelled wainscotting is set out with skill and is nicely proportioned, with moulded pilasters occurring at intervals to diversify the wall surface.

Hardwick—not many miles away—like Wollaton, a hall of ample fenestration, possesses some fine woodwork, and in its turn furnishes some examples of panelled wall surfaces of good proportion and detail.

An internal feature, characteristic of Elizabethan and Stuart times, is met with at Broughton Castle, Banbury. We refer to the corner porch in the drawing-room, with its open archway, its elaborately-carved pilasters and frieze, and its pinnacled crowning ornaments.

Another example was formerly to be found at Sizergh Hall, in Westmoreland, but it, if we mistake not, and the other fittings of the room in which it was situated, were purchased a few years ago and removed to the South Kensington Museum, where they are now to be seen. If we cross the water and extend our journeyings as far as Belgium, we shall see in the Council Chamber of the Hôtel de Ville of Oudenarde, another corner porch, of Early Renaissance character, a superb specimen of decorative woodwork.

Staircases play such an important part in a house of any pretension, and if designed with skill contribute so largely to the beauty of the interior, that it is gratifying to find they have received their due share of attention. The elaborately-carved example from Thorpe Hall, Peterborough, is the subject of one of the most interesting and artistic drawings of the series, and well merits the care that has been bestowed upon it. Here Webb has freed himself from any trace of Elizabethan influence, and the *motif* of the design is distinctly classical in feeling, retaining at the same time an element of the picturesque and freedom from stiff formality. Its proportions are harmonious, and its general effect is most satisfactory. Panels of pierced scroll-work, carved with acanthus leaves and fruit, take the place of the customary balusters, the stringboard also is enriched with decorated mouldings and carved work of flowing design, and the newel posts share in the elaboration of the rest of the work and are crowned with vases of fruit and flowers.

Illustrations of ornamental woodwork from one or two of Wren's City churches, at a time when English Renaissance architecture is the subject of careful study, should prove of interest to the reader. The doors in the vestry of St. Lawrence, Jewry, are beautifully designed, and the detail throughout is excellent, the carved festoons and pendants by Grinling Gibbons adding largely to the general effect. Equalling them in interest are the doors and screen from St. Stephen's, Walbrook, which display somewhat similar characteristics in moulding and ornament.

Before we conclude our survey of the contents of Mr. Tanner's volume, we must make some reference to the subjects he has selected from Hampton Court Palace. The external features of this noble pile of buildings have often appeared in illustrated form, and the same remark applies to the interior of the Great Hall, but we do not recollect to have seen before drawings in detail of the woodwork of the Chapel, the King's Gallery, and the King's Bedchamber. These internal decorations, which date from the beginning of the Eighteenth Century, were designed by Sir Christopher Wren, and here again Gibbons is responsible for the carving, which enhances so materially the beauty of the architectural setting. Of the examples shown, the beautiful doorway from the King's Gallery deserves especial mention, by reason of the excellence of its mouldings and carving. The stalls of the Chapel, although plain in character, are nicely proportioned, but the bench ends are more ornate, being enriched with some brackets of pierced carved work, which add to their appearance.

Turning from the subjects of the illustrations to the drawings themselves, we can unreservedly praise the excellence of the draughtsmanship. It is clear, crisp handiwork, and is by no means lacking in artistic quality. Of the fifty plates contained in the volume, eight are copies of the author's pencil drawings reproduced on toned paper by a particular process specially adapted to express without loss of feeling the delicacy of touch of the original work. They certainly have a distinct charm of their own, but in a book of reference for office use we confess to admitting a preference for the medium of photo-lithography employed for the reproduction of the drawings in pen-and-ink, which constitute much the larger section of the series.

In conclusion, we must thank Mr. Tanner for his valuable contribution to the literature and illustration of English Renaissance architecture, which, whether in its picturesque Elizabethan garb or in its more correct and formal dress of later date, has manifold claims upon our notice and appreciation.

Leeds. WILLIAM HENRY THORP.

JOINERY.

Modern Practical Joinery. By George Ellis. 8o. *Lond.* 1902. *Price* 12s. 6d. *net.* [*B. T. Batsford, 94 High Holborn, W.C.*]

A treatise like this has long been wanted, for the interval between the production of such works as Newland's and Tredgold's and the present one has been long. True, we have had chapters on "Joinery" in text-books on building construction, but all—student as well as practitioner—will welcome Mr. Ellis's handy work, and will find it in every respect up-to-date. This recent publication by Mr. Batsford is one that will very largely recommend itself by reason of its comprehensive scope, the variety of its subjects, its conciseness of treatment, and the clearness of details. The practical information conveyed from the long experience of the author is not the least of its recommendations.

Mr. Ellis lays no claim to style, but he is to be credited with being, nevertheless, clear and explicit throughout—a characteristic one values more in explaining workshop practice and workmen's methods than the more polished phrases—and obscure references—of many an inferior text-book, "the author's desire being to make himself easily understood, rather than to aim at any literary style."

Of the utmost value to the student and apprentice are the early chapters on tools and appliances and workshop practice, as well as the closing ones on timbers and the woods used in joinery.

There is little fault to find with the diagrams or the text. On p. 103 it would be better to describe the jib door as a flush-panelled secret door, the outer being the flush side. The frequent necessity of forming doors as secret openings in panelled work would have rendered a careful detail of such work very useful; also the hanging of a panel to open in panelled work, where, for instance, it is desired to conceal the presence of switches. It is difficult to hide the pivots at the head of a door, as in fig. 331, for the picture-rail does *not* mask the presence of a pivot. One searches in vain for a detail of a loophole door and frame, so frequent in warehouses, although a "warehouse hung door" is given on p. 114. The drawing numbered 328 has the mitres of the chair rail and skirting on the shutting style badly drawn. This has received more careful attention in a similar instance, No. 334, a dwarf screen door.

The illustrations are nearly all working drawings to scale, but in a few instances where figured dimensions are freely used, as on p. 134, the details would be rendered more complete, and possibly more useful, by the addition of a scale. Diagrams should be kept, as nearly as possible, in relation to the text they explain, even if this should entail putting some of them on a flyleaf, or repeating a diagram on more than one page. Photographs of executed work might be more freely used, the only one (excepting those in the chapter on tools and how to use them) being a photograph of a handrail wreath. The exceptions named are very good and useful, but the utility of the work would be extended by the more lavish use of similar illustrations. Examples of old work, too, would have been most welcome, for those introduced are extremely few, and the old methods of solving problems are oftentimes resorted to in the present day.

The glossary at the end of the volume is fairly full, but no terms dealing with the staircase and its parts are to be found there. The explanation is found in Chapter XV., where all terms peculiar to staircase and handrail work are collected together in a separate glossary. The wisdom of this is open to question, but having once discovered the dual arrangement one finds in one or other collection all that is wanted in joinery, even to the definition of an "ancient light"! Some of the terms require revision: "Dog's tooth" is not happily described; "Romanesque" should be amended; "Dry rot" is described as "a fungoid disease . . . induced primarily by dampness"; "Planceer" is explained differently in each glossary (pp. 220 and 361), and it is new to find the thumb-mould of a flap described as a "treacle-mould."

Attention might have been drawn to the statutes and regulations governing the use of woodwork in external walls, as in the London Building Act. The author does mention these limitations as affecting shop-fronts, and incidentally refers to the Building Act as "the regulations of the London County Council."

Finally, we welcome the hint, modestly concealed in a footnote to the Glossary, of the early appearance of a similar work on "Carpentry." Mr. Ellis will no doubt produce an equally useful work, and both author and publisher are much to be congratulated on the appearance of the present treatise.

W. Wonnacott.

ALLIED SOCIETIES.

THE CARDIFF SOCIETY.

Presidential Address to Associates.

The following address to the Associates of the Cardiff, South Wales and Monmouthshire Architects' Society was delivered by the President, Mr. David Morgan, on the 11th December:—

Gentlemen and Fellow Students,—In the first place allow me to thank you for the honour you have done me in asking me to address you this evening. I can assure you I am deeply conscious of numerous shortcomings; but with your indulgence and attention I will endeavour in a conversational rather than a dictatorial way to interest you for a little while. In anticipation of the task I have undertaken I have been somewhat exercised as to choice of topics on which I might appropriately venture to speak. Being but a young practitioner, I should hesitate to address myself to the older members of our Society. My remarks will therefore be confined more particularly to Associates, who will be more ready to criticise gently the speaker's efforts.

As far as Cardiff is concerned there does not appear to be much work going on at present in our line, and it would appear that the good old times are gone for ever when there was ample work to do and very few architects to do it. At present it appears to me that there are too many architects after each job, and so eager are they for work that advertisements for designs, offering the most unfair terms, are answered by a large number of competitors. Men pose as architects who have never served a day's pupilage—do not know Classic from Gothic; you will often find their roof-couples fixed over window and door openings, with other faults of construction of a risky kind and a glaring nature.

Ours is an arduous and a noble profession, and as one who has toiled at it for twenty-seven years (sixteen of which in independent practice), I feel that often we are seriously handicapped in having in competition with us untrained, unqualified, incompetent, and dishonest persons, who play upon the gullibility of the British public. Copies of our specifications and drawings are obtained through various unscrupulous sources, and in time these plagiarists acquire a certain amount of superficial knowledge, with the result that up goes a brass plate, and the public are deluded by these so-called architects.

Not very long ago I received a postcard from a man who was a mason by trade: the heading on this postcard was ". . . so and so . . . Builder, Undertaker, and Architect." I quote the following from *The Builder*:—

> An architect sends us an advertisement from a provincial paper, asking for tenders for a house, which are to be sent in to a gentleman who defines himself as "architect and coal merchant." This seems a new professional development. It would be interesting to know which occupation came first. Is the advertiser a coal merchant who for a special occasion has blossomed into an architect? Or is he an architect who has taken to speculating in the coal trade as a means of adding to his income? At all events, the idea suggests further possibilities of development.

In Cardiff possibly we are not affected by these people; but in the colliery districts they are more numerous than the genuine architect, to whom they are a constant source of grievance. I suppose in due course the public will become sufficiently educated to distinguish between the true architect and the *quack*, and that we shall not have in competition with us these bogus practitioners. In these laudable efforts the powerful influence of the daily press could considerably assist us, and be the further means of cultivating a better appreciation of all good architecture. Many contractors now keep draughtsmen or get their sons taught to draw plans, and undertake to provide clients with drawings for nothing, thereby depriving our profession of much work that ought legitimately to come to our offices. Nearly all the modern shop-fronts in our town are made from drawings provided by the builders and not prepared in an architect's office, and often alterations of considerable extent are planned in the same quarter; the clients of course being told they need not go to the expense of employing one of our profession.

I cannot help thinking that we architects practising in Cardiff have a genuine grievance against the Cardiff Corporation. I refer to the present system of employing the Borough Engineer to do the architectural work in connection with such public buildings as the Sanatorium, the Markets and Swimming Baths, &c. Considering that we contribute a good proportion of rates towards such buildings, it seems to me only reasonable that as much of this class of work as possible should be thrown open to competition among the architects of the Borough, who are quite capable of performing it.

The Borough Engineer is a gentleman whom we as architects hold in high esteem for his ability and courtesy to us at all times when he is approached in matters appertaining to our profession. His varied duties and heavy responsibilities as Municipal Engineer and Surveyor are sufficiently onerous without his being burdened with architectural work such as I have referred to, and compelled, periodically, to ask for additions to his large staff of assistants. It places us in an unfair position, and we, as a Society, ought to approach the Corporation with a view to remedying in future this grievance.

Just now I referred to the arduous duties of our profession. When it is borne in mind that we may have to design a church one day, at another time a chapel or school, a public hall, an hotel, a set of farm buildings or block of stables, a row of cottages or an arcade, a bank, possibly a workhouse or hospital, together with warehouses, bakehouses, and all sorts of business premises and varieties of buildings, with occasionally a survey or valuation of property, all of which demand knowledge which must be acquired by special effort as each case arises, it requires perseverance in order to ensure satisfactory results, and to satisfy your client by seeing he gets all the contract stipulates for.

To be able to construct soundly and scientifically, to plan conveniently, and master the necessary knowledge of the qualities of materials and the way they are to be put together, an architect must know the principal characteristics of cements, mortars, and concretes, a good brick or slate from a bad one: to see that the old and familiar clause "all timber to be sawn die square, free from sap, shakes, large loose knots and other defects" is properly *enforced*, and not to forget to keep a vigilant eye on the plumber, so as to build in a healthful and sanitary manner—all this necessarily implies that an architect has his work cut out if he wishes to proceed conscientiously and satisfactorily.

There must also be added to what I have already named those often complicated subjects that touch on the laws of contracts, of rights and easements, not forgetting the architect's worst enemy, "ancient lights." I cannot forget one of my early experiences (in conjunction with Mr. James, my partner) in a matter of "ancient lights," where our client was unfortunate enough to have them on three sides of his premises, with the result that in a very short time there were half-a-dozen solicitors and an equal number of architects on the war-path. After many sleepless nights to our client and the payment of various sums by way of compensation, which totalled up something equivalent to half the cost of his new building, we were allowed to carry out our plans. I need hardly state that we shared considerably in our client's anxiety, but could not, out of pure sympathy, charge him anything for the extra time and trouble we were put to as his architects.

Then of course we have the builder to deal with: he often starts by objecting to certain clauses in the contract agreement and desiring their modification, and, unless he is a rare exception, very soon after commencing his contract he puts in a claim for some "extras" (a term once described in my hearing by a well-known local contractor as the builder's "Guardian Angel").

In nine cases out of ten "extras" will arise, and they are often of the employer's own making. It is well to provide a provisional sum for *contingencies*, equal, in my opinion, to 2½ per cent. (Perhaps you are not all aware that in Schedule VII. of the Board of Education Rules for planning of elementary schools such a percentage is suggested for contingencies and will receive that body's sanction in the case of a new school building.)

When the time comes to adjust and settle accounts with the contractor, it will be found that such a *contingency* will occasionally enable you to complete your building free from "extras," and your client will naturally be pleased. Young architects, especially, are afraid to tell their clients of extras as they arise; hence unpleasantness at the end.

Most of the Cardiff builders carry out excellent work as regards the actual erection of the building, and push on well with the work until nearly the end of the contract, when it is my experience that the foreman is sent off to some new job; consequently there is unnecessary delay in attending to the many small matters that require finishing.

I think that a knowledge of quantity-taking is most useful to every member of the profession, and certainly it cannot be said to be the least remunerative part of our work. Quantities are often badly priced, while the moneying out is very often carelessly performed. It is a good rule to check the contractor's priced schedule before the contract is signed. We should not forget that at all times we are to act fairly and honourably to the builders, being, as we are, constantly in the position of an arbitrator under the contract, and paid by the opposing party, the employer.

It cannot be said that principals always exercise sufficient care in admitting pupils to their offices, by giving them, say, a month's trial in order to ascertain if they possess the necessary talent or aptitude for the work; but instead, often youths are articled straight away, and find out when too late the work is totally different from what they expected, or are fitted for, with the result that sometimes they abandon the profession and have to start in a new sphere more congenial to their proclivities.

Then some architects simply "farm" pupils, which is, I consider, unfair to the pupils in such an office. Personally, I should favour the limitation of pupils at one time in an ordinary office to *two*, and insist on the articles being drawn out for not less than four years. Once fairly started on your career, do not hesitate to ask questions and make it a point to get at the reasons for everything connected with your work. I well remember how puzzled I was when struggling to get out my first half-inch scale detail of a staircase for a small tower, and the number of times I had to get assistance from the managing assistant, who very kindly exercised considerable patience, and saved me from drawing a staircase which, if constructed my way, would have given many a head a bump against the landings. Things, however, became clearer after a time, and instead of thinking I should never make any sort of an architect I began gradually to feel a real interest in the work, and have ever since loved it.

Speaking as one who has derived undoubted assistance through attending the old Science and Art Schools, I strongly recommend all pupils to attend the present Technical Schools. It is not fair to expect you to work all day in the office, and then apply yourselves to study every evening; but this can be done, without evil effect, at least two evenings a week.

I would also impress on you to start by getting into methodical and neat habits, by making it a rule not to turn out an untidy and slovenly drawing or specification: this habit once formed, you will in later years find it quite natural to be neat, exact, and thorough in your work. I cannot refrain from remarking that in one respect, at any rate, there appears to be a serious falling-off in the style of the handwriting of the present-day youth. Very rarely you can nowadays get a specification or report written out in good style. To be able to *letter* your plans well is in my opinion an acquisition towards the desired finish of a drawing.

A good plan I adopted, when a pupil, on the advice of a friend, was the starting of a pocket-book into which I used to jot down good points of construction, sketches of mouldings, details of a casement or lantern light, section of a church or chapel seat, scantlings of timbers, and such-like information. In time this information had accumulated until it became, to me, exceedingly valuable.

Another excellent plan is to *cube up* various buildings that have been erected from plans prepared in the office and ascertain at the close of the contract how much per foot such a building has cost. This you will find of inestimable advantage in guiding you as to the probable cost of future buildings, and help you to give your client a structure something approximating the sum he is prepared to expend on it.

To enable us to develop successfully sound constructional knowledge it is essential that frequent visits be made to buildings during course of erection, and, whilst doing so, we should not be above exchanging a kindly greeting occasionally, not only with the foreman and clerk of the works, but with some of those good-natured cheery labourers, *and more especially the scaffolders.* You will then find how ready the latter can make your paths across naked floor-joists comfortable and safe by a friendly eleven-inch plank thrown hastily over.

With regard to the inspection of buildings, a good clerk of the works relieves the architect of much anxiety.

The success of an architect's practice necessarily depends on the ability of the practitioner. The architect should be above all things an artist if he wishes to excel in the profession. True architecture, I take it, is first of all to be able to plan your building so as to be of utility, and then follow with your elevations appropriately, not stooping to shams frequently to be seen in our towns, such as gables put up for appearance, instead of being the natural finish to a roof. In some places I have to visit it irritates one to find occasionally a ponderous chimney-stack built right over and close to the top of a window. How they manage to run up their flues outside of these windows without setting fire to the wood lintels is a mystery. Other times you find in a narrow street an elaborate elevation to a building, with a lot of expensive detail and carving clean out of sight, and cornices fifty or sixty feet above the pavement level, with the same number of members as there would be if the cornice were ten feet from the eye, together with a superfluity of detail, to the detriment of the general effect of the design, which, as Mr. Aston Webb remarked in his address recently, should be that of "repose, sobriety, and dignity."

I am now going to offer advice which I am bound to admit has not been put in practice by myself, that is—to recommend all assistants and pupils to occupy their spare time in reading up for the R I.B.A. examinations, and, if possessing sufficient ambition, to try for one of the travelling studentships, go abroad for a time and acquire a knowledge of the world before settling down to a practice of their own. The mere preparation for the examination must in itself prove of considerable benefit. Of course we cannot all be geniuses, but we should have the capacity for taking great pains and persevering with our studies, so that ultimately we may be able to avoid what geniuses are often guilty of, viz., working by fits and starts, instead of being equal to all the ordinary calls of our profession.

With regard to local facilities for the proper and thorough study of architecture, we only have the Technical Schools, under the able direction of our friend, Mr. Bush; but the teaching is of an elementary nature and does not go far enough; there is an utter lack of anything like the comprehensive system of tuition required for an architect. In this respect we are far behind other large towns, where they have successfully organised lectures, classes, and demonstrations in architecture, building construction, &c., by competent men. In Liverpool, Manchester, and Leeds in the North, and many large towns in the South, the Technical Schools have their professors of architecture as well as civil engineering, and so fully alive are the R.I.B.A. and the Architectural Association in London to this all-important question, that a Day School has recently been established in connection with the Architectural Association, which promises to be a great success. Also, within the last month, in order to supply much needed accommodation, the Architectural Association have acquired the whole of the premises of the well-known Architectural Museum, which they intend to adapt to their immediate requirements.

Now, as our local college authorities will shortly be receiving competitive plans for the new University buildings, it is to be hoped that the accommodation necessary for the proper teaching by a competent professor and staff has been included in their instructions to competing architects. If this has been omitted it becomes the duty of our Society, as allied to the R.I.B.A., to suggest (and, if necessary, to advise) the same for the immediate consideration of the Governors of the College.

Scholarships might be established, partly supported locally and aided by grants from the R.I.B.A., which would act as a powerful incentive to study and would have a far-reaching influence for good generally.

Why not try at once to induce a few of our eminent architects in London to come down and give us a lecture or two—something on the lines of the University Extension Lectures? It would be the means of bringing us together for friendly intercourse and discussion, and would give a powerful impetus to architectural study generally.

This subject of education is one which demands serious and immediate attention and deserves to be taken up by the members, especially the younger members, with all earnestness and enthusiasm, and I ask you, gentlemen, to give your cordial and unselfish support in the matter. I have dwelt, perhaps, rather too long on this subject, but its vital importance is my only excuse, for I feel strongly that something ought to be done by us to bring about a better and a more comprehensive system of architectural training.

Reverting again to the competitive plans for the new College, I understand that *four* eminent architects have been asked to submit designs. These gentlemen are well-known experts in technological buildings, and without in any way disputing the choice, I think the authorities, if only as a matter of courtesy due to this Society, might have consulted the Council, and asked them to nominate at least *four or six* selected architects from our midst, to compete with those mentioned. It would only be doing what the London County Council has often done with the R.I.B.A., and what has been rightly done by other authorities under similar circumstances.

In the near future we can expect to find plans will be required for, amongst others, the following public buildings : — New University Offices, Offices for the Central Board, Boys' Intermediate School, Drill Hall, &c. : *Let us hope that we local architects will not be overlooked when the time arrives to deal with the question of plans.*

It is with pleasure that I heard a day or two ago that *two* of our Associates—viz. Mr. Ivor Jones and Mr. Crowley—have recently successfully passed the R.I.B.A. Final Examination. To both of these gentlemen I offer, on behalf of the Society, hearty congratulations. Another of our Associates, whose ability and works we all admire, has had the satisfaction of finding his design in the competition for the Barry New Free Library and Town Hall *placed second.* I refer to Mr. Ashford, to whom we also offer sincere congratulations, and assure him we are proud of his success. Unfortunately, he has left Cardiff to practise in Birmingham. There are several others of our Associates who hold excellent appointments under the London County Council. It is to be hoped more of the Associates will strive to emulate the example of the gentlemen I have just named. We may then avoid the experiences of the past few years, which have not been at all consolatory or particularly flattering to the genius of the Cardiff architects, viz. : to find that between the new Town Hall and Asylum Buildings a matter of about £30,000 has been lost to us in commission, through plans and quantities for these buildings having been placed in the hands of outside architects.

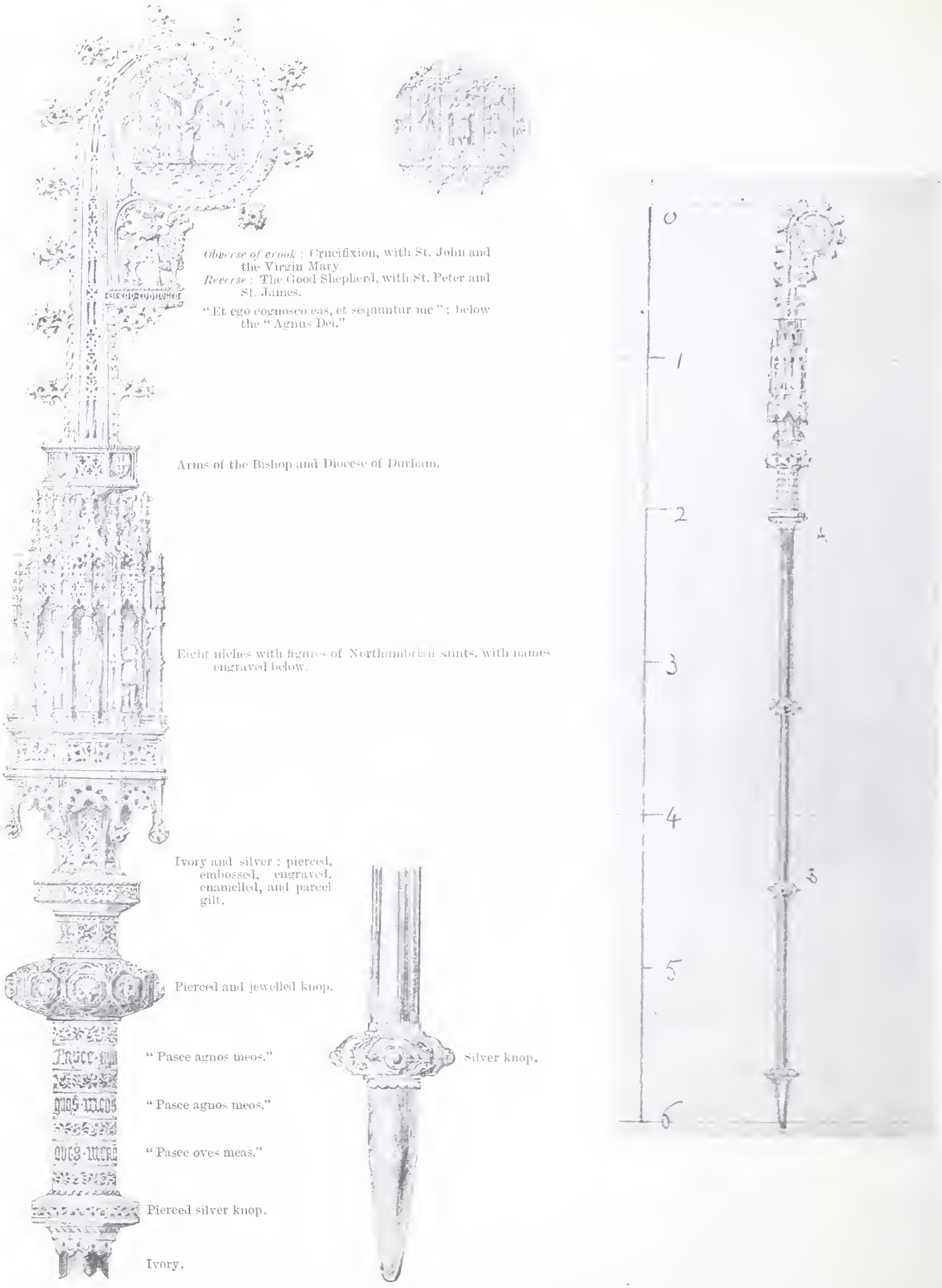
In these days we architects are fortunate in having in our town library an excellent collection of books on art and architecture, as many of you witnessed the other evening, when Mr. Ballinger so kindly brought them together for the inspection and benefit of our Society. Some of you may not be aware of the fact that in our room upstairs there is a bookcase pretty well filled with architectural books and papers well worthy of perusal. I am afraid that advantage is not taken of these good things at our disposal, although I must here say that the substantial number who turned up at the library on that particular evening was, to me, very gratifying. Mr. Ballinger has kindly undertaken to print a complete catalogue of the *architectural books* in the Library, which cannot fail to be of exceptional use to all interested in the profession. The Reference Library is quiet, free from loafers, just the place for quiet study.

As far as my observations go, architects, speaking generally, are not gifted largely with the oratorical faculty : those of you who, like myself, are of a modest and retiring disposition, should make it a point to practise on all possible occasions the art of speaking sufficiently well to enable you to explain your plans and schemes in a lucid and concise manner. You will find it useful when appearing (as most of us have to do, some time or other) with plans before public bodies, such as County and District Councils, School Boards, Boards of Guardians and Church and Chapel Committees.

I once had to deal with a Chapel Committee composed of about thirty members, who called upon me to read through a specification of about forty pages of foolscap. On this Committee there were several carpenters and others connected with the building trade. You can guess that, before they had done plying me with questions and offers of suggestions, I was glad to get out into the fresh air and quench the thirst they had created.

In conclusion, allow me to ask you to strive to contribute in every possible way towards the success of our Society. This can be done in many ways—by attending the meetings and taking part in the discussions, and by banishing all miserable and petty jealousies, so prevalent amongst our profession. If these few disjointed remarks have in any way interested you, or helped to rekindle your enthusiasm, I shall have been fully repaid for my humble efforts.

We hope during the ensuing six months to have several papers read to us, and to make some visits to buildings and places of interest ; and if it be the general opinion at the close of this evening's programme that a " smoker " or two will help to bring us into closer and convivial contact with each other, I shall be most happy to do what little I can to further the idea and assist in the proceedings.



Obverse of crook: Crucifixion, with St. John and the Virgin Mary.
Reverse: The Good Shepherd, with St. Peter and St. James.
"Et ego cognosco eas, et sequuntur me": below the "Agnus Dei."

Arms of the Bishop and Diocese of Durham.

Eight niches with figures of Northumbrian saints, with names engraved below.

Ivory and silver: pierced, embossed, engraved, enamelled, and parcel gilt.

Pierced and jewelled knop.

"Pasce agnos meos."

"Pasce agnos meos."

"Pasce oves meas."

Pierced silver knop.

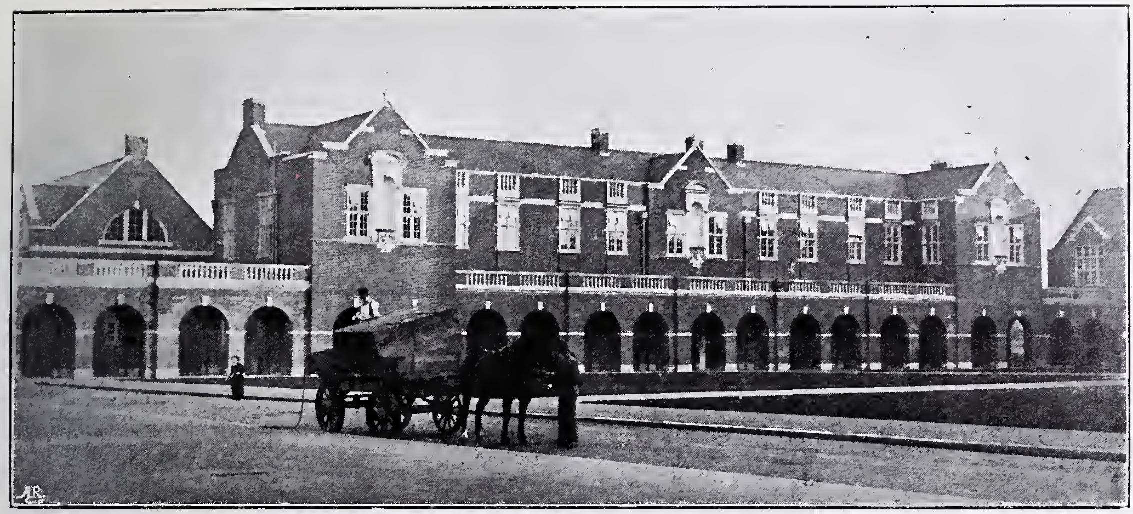
Ivory.

Silver knop.

THE CROZIER OF THE BISHOP OF DURHAM.

Designed by the late WILLIAM SEARLE HICKS (Hicks & Charlewood, Newcastle-on-Tyne)

Photographed from the original drawing.



Christ's Hospital School, Horsham: Front View of the Science Block from the Quadrangle. (From a Photograph by Mr. Chas. E. Browne, the Senior Science Master, to whom the Author is indebted for the Photographs illustrating this Paper.)

SCIENCE WORKSHOPS FOR SCHOOLS AND COLLEGES.

By Professor Henry E. Armstrong, LL.D., Ph.D., F.R.S.

Read before the Royal Institute of British Architects, Monday, 19th January 1903.

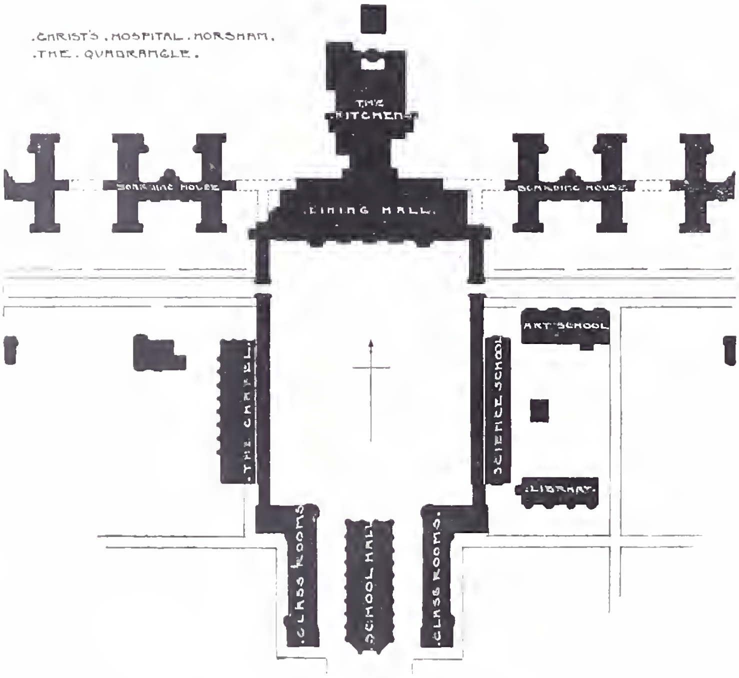
THE importance of experimental studies carried on with the object of affording training in scientific method, as a necessary part of the ordinary course in schools generally, whatever their grade, is already so widely recognised that ere long every school will certainly need its *workshops* as well as its *class-rooms*; it is therefore desirable that the general character of the requirements should be understood, in order that buildings may be properly designed to accommodate all necessary fittings and appurtenances—and more particularly to afford the necessary working space.

In preparing such a statement, it is well to look ahead and to foreshadow the policy of the future, as the whole question of school design may assume a very different aspect in years to come; indeed, the architect may play a by no means unimportant part in helping on reforms which many think to be very necessary if practical work is to take its proper place in the ordinary curriculum of every school.

I propose to illustrate my arguments largely by reference to the new buildings at Horsham for Christ's Hospital School, which have been erected from the designs of your President and Mr. Ingress Bell to accommodate 820 boys. When the position and size of the Science Block (see plan, p. 166) with reference to the other school buildings are noted, it will be obvious that extraordinary importance will be attached to experimental studies in this school. The Science Block occupies practically one side of the quadrangle; the opposite side is occupied by the Chapel, the Class-Rooms and School-Hall filling the third, the Dining Hall the fourth side. The floor area of the ordinary class-rooms is 15,482 square feet, that of the rooms in the Science Block is 10,326 square feet, the area of the four large rooms—the science class-rooms proper—in which the boys usually work being about 8,200 square feet. The importance of the Science Block will also be obvious when the elevation is contrasted with those of the other buildings surrounding the quadrangle.

But the provision which will be made at Horsham for work such as I am contemplating will not be confined to the Science Block. At no distant date, I trust, there will be distinct workshops for manual training in wood and metal; and the engineering appliances generally will afford opportunities for the instruction of the more advanced boys in the use of machinery. Moreover, surveying and map making will be practised in the country round, and there will be abundant opportunity for other out-of-door studies; besides school gardens, a set of experimental plots are now being laid down on the lines of those at the Rothamsted Agricultural Station which have so world-wide a renown.

Christ's Hospital School, in fact, ere many years are past, should be a model school; and it is because the buildings illustrate so many important points that I propose to refer particularly to them. I am the more inclined to do so as the Christ's Hospital buildings mark an extraordinary advance—far greater than most of those who are connected with them have realised, I think.



I may be allowed here to say how much, as one of the Governing Body, I appreciate the great work which your President and his colleague have carried out; and that in watching the progress of the buildings from the time since the foundation-stone was laid to the present day I have never been without occasion to wonder how many things the architect must be to all men.

School work hitherto has been sedentary work; provision has been made almost exclusively for the use of books, slates, pens, ink, and paper. During school hours boys and girls have been almost chained to their desks like galley slaves; although laboratories for the instruction in science, workshops for manual training, have been introduced here and there, the space provided in most cases has been very small; and the allowance of time for practical studies has been on a most niggardly scale. I heard it said recently that one of the most distinguished head masters of the day had summed up his educational creed in the words "Latin and the cane;" and although fashion forbids the latter—perhaps unfortunately—the pernicious belief in the all-sufficing efficiency of the classics as a means of culture is still with us: obviously no very special provision need be made so long as such simple weapons were alone to be used.

Our schools are too frequently in the hands of men who have not had a practical training; but probably the coming generation will order things otherwise. We are, in fact, now beginning to recognise that the clerical methods adopted almost exclusively in the past must be modified—that it will not do to train our boys as though all were to be clerks or our girls as though all were to be teachers, telegraphists, or type-writers; but that men and women have practical instincts which must be developed if they are to do their work in the world efficiently. The consequences of an unpractical system of training are rapidly becoming more and more serious on account of the extraordinary extent to which in these days the subdivision of labour is carried—so that few have sufficient opportunity of learning in that most practical of all schools, the school of experience. The teacher must be encouraged to be practical in every possible way. Even in the case of man teachers of the ordinary subjects, time is so fully occupied that they have little opportunity of paying attention to external conditions and requirements; women teachers are placed at a still greater disadvantage: as they are usually selected from a studious literary type, the tendency on their part to worship unpractical ideals becomes almost overwhelming and it is not surprising that so little attention is paid to domestic interests by our girls' schools. Architects more than most professional men can appreciate the value of practical knowledge as well as the danger of following academic traditions; and it is important that they should be alive to their opportunities as well as to their responsibilities. By making practical provision for practical teaching when called on to advise school authorities, they will be exercising a most important influence; and it is on this account that I venture to submit these remarks.

I may quote one or two witnesses in support of my contention. Sir J. Wolfe Barry, a few days ago, in delivering the Presidential Address to the Association of Technical Institutions, said, "We desire to see in this country what was so observable in America—namely that almost everyone was a mechanic and knew something of applied science."

At the recent Conference on the Training of Teachers at Cambridge, Mr. Sadler, the editor of the well-known special Reports on educational subjects published by the Board of Education, spoke of the new forces of educational thought as "moving towards the recognition of manual and practical work as necessary elements in all education, even in some degree in that provided for boys of literary aptitude and of non-mechanical tastes."

Sir John Gorst, at the same meeting, expressed the opinion that what I have called the workshop method—"the method of teaching the young to find out things for themselves and to apply the knowledge which they themselves have acquired to the solution of practical problems—is a method of education which is very likely to be heard a great deal more of in the course of the next generation."

At the Conference of Teachers held at Manchester at Christmas, the Head Mistress of the Manchester High School for Girls, Miss Burstall, recommended that one-third of the school-time should be given up to practical studies. In comparison with the one or two hours a week grudgingly granted in the public schools to such work, this is a remarkable advance.

But we are not only becoming more practical in our views as to the general character of the school training of the future: our conceptions are also broadening in other directions, especially with regard to the way in which "science" should be taught; with regard to the extent to which freedom may be granted to the scholars; with regard to the relation which the various subjects taught in schools should have to one another.

In the past it has been customary to teach some branch of science—usually either chemistry or physics or both—and laboratories have been required for this purpose; in fact, the word *laboratory* has a specific connotation in connection with the teaching or practice of some branch of experimental or observational science. Unfortunately, in introducing experimental science into schools, the mistake has been made of merely transferring red-hot embers from the university or college and then proceeding to keep the fire burning on the professional lines followed in the technical school. We are being led gradually to see that this mistake must be rectified—that it is not the province of schools to teach any branch of science technically or even specifically. We desire, in fact, to get rid of formal science and to give broad training in scientific method—to subject the young scholars to the practical discipline to be derived from experimental studies; we do not wish to make specialists of them. A step is gained by substituting the word workshop for laboratory: by so doing we not only make use of a word which is familiar to English ears, but gain an enlarged and more definite conception of the kind of work to be done. Everyone thinks of work done in the class-room as different from that done in the workshop. It is material to my argument that in the workshop the onus is cast on the worker rather than on the director: one of the chief objects of introducing experimental studies into schools is to train boys and girls to be self-helpful.

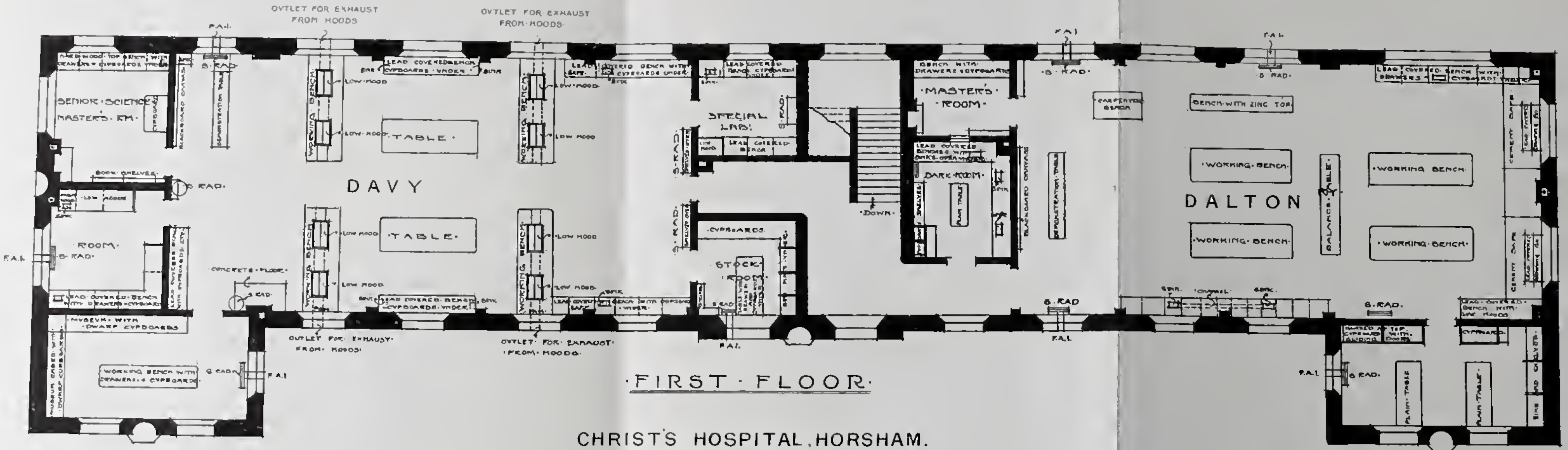
At Christ's Hospital the four chief rooms in the Science Block are called Science Workshops and are distinguished by the names of Cavendish, Dalton, Davy, and Faraday—all classic names in the history of English science.

If the work done in the school workshops is to be of a general character, it is obvious that the fittings must be planned and arranged accordingly.

In the past, as a rule, subjects have been taught in watertight compartments; but there is a growing tendency to co-ordinate much of the teaching, especially in the junior classes. Thus, mathematics has been taught in the class-room as a desk subject, whilst elementary physical measurements which have been neither more nor less than practical mathematical exercises have been carried on in the laboratory under the science teacher. It is urged—and with force—that the teacher of mathematics must adopt practical methods and relieve the teacher of science of much that now falls to his share. Clearly, one of two courses must be adopted—either the necessary provision must be made in the mathematics class-room for the practical study of the subject or a large part of the mathematical teaching must be transferred to the science workshop. A good deal of drawing is now done incidentally in the course of the science lessons; and gradually we are also recognising that the science work has a literary side. Everything points, in fact, to a time when class-rooms such as are now provided will be of subordinate importance in our English educational system—to a time when we shall justify our contention that we are a practical people.

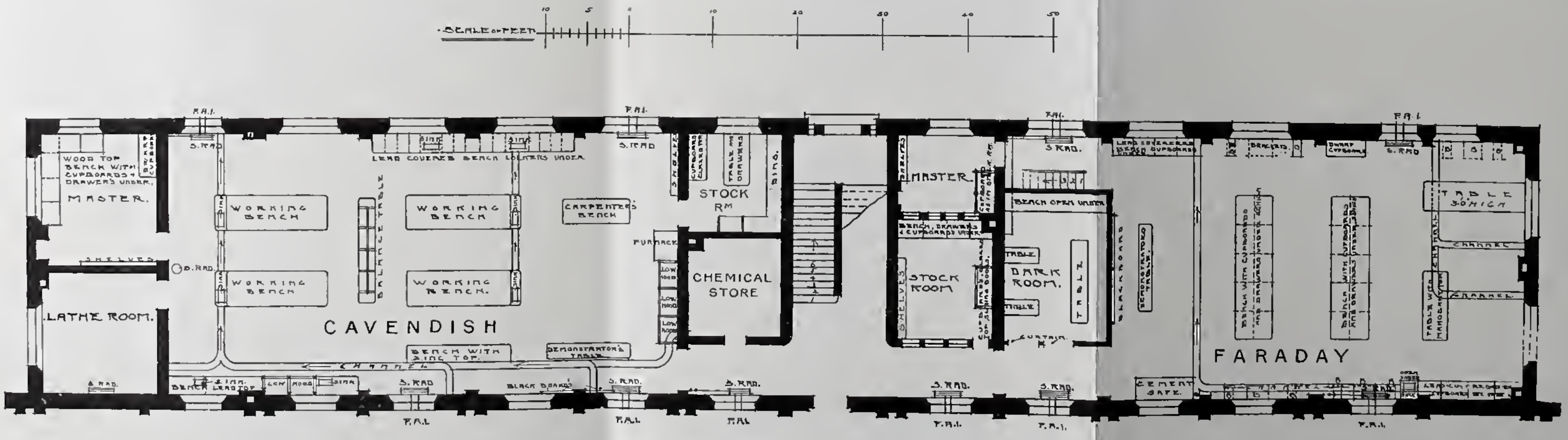
To summarise my recommendations, I would say that in designing science workshops the architect and his technical advisers should have three S's in mind—*Sense*, *Simplicity*, and *Space*. There should be due knowledge and understanding of the requirements to be met—mere copying should be impossible. The provision made should be of the simplest character possible—because simplicity of provision conduces to simplicity of practice; and the space should be ample—for almost anything may be done, given sufficient space, and to grant proper space is to show proper respect.

It is not my province to consider external design or general architectural effect, but I will venture to urge that money spent on judicious ornamentation is always well spent in the case of a school. We give far too little heed to the influence which surroundings exercise on young people; and if we are ever to recover the sense of artistic feeling, we must do far more to make our schools attractive. The disregard of property which seems to be so characteristic of boys at the present day—which leads them to kick open doors, to wipe their feet on the railway carriage seats, &c.—is probably a consequence of the fact that at school they are not placed under conditions which would lead them to be mindful of their surroundings. It is astonishing that the example set by Thring at Uppingham has met with so few followers hitherto: "thinking in shape" such as he advocated is one of the most powerful means of stimulating the imagination and of developing æsthetic tastes; and it is so easy to carry out his idea in these days, as magnificent photographic reproductions of the masterpieces of Nature and of Art are to be had at comparatively small cost. The moral of these remarks is that neither class-room nor corridor should be without its picture rail. I would also plead for a more liberal use of colour and of line decoration in our schools.



·FIRST · FLOOR·

CHRIST'S HOSPITAL, HORSHAM.
THE SCIENCE SCHOOLS.



·GROUND · FLOOR.

C.F. KELL & SON, PHOTO-LITHO 8, FURNIVAL Sᵀ HOLBORN E.C.

Before describing the science workshops at Christ's Hospital, I should say that the fittings were not thought of until long after the building was designed. Of course, to secure the best result "the punishment should fit the crime"—the building should be designed to the fittings, not *vice versa.*

They differ in an important manner from the laboratories hitherto provided for schools. On reference to the plans, it will be seen that there are four main rooms in which classes are held; and that to each of these are attached a number of subsidiary rooms.

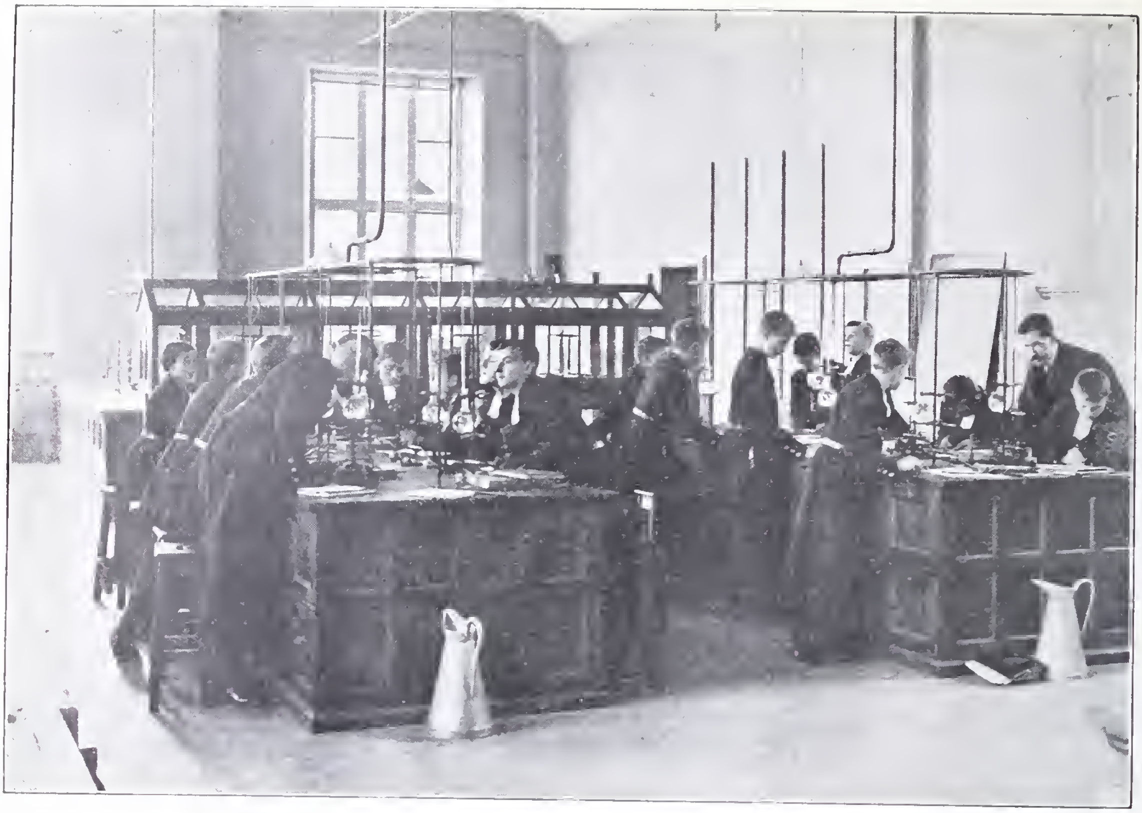
No lecture room is provided; the omission has been made of set purpose, as it was desired to discourage didactic teaching. The object of introducing experimental science into schools is to give boys and girls an opportunity of learning to do things themselves; the time devoted to such work is brief enough, and they cannot afford to waste any of it in listening to formal lectures. Full provision is made in each room for such didactic teaching as may be necessary by providing a demonstration bench, in front of which there is sufficient space left free for seats in two of the rooms, whilst in the others uprights are fixed, provided with small desk tops, at which the class can stand and take notes.

Moreover, no special balance room is provided; instead of such a room, a novel fitting—a balance bench—has been introduced. At first this was provided only in the two of the four workshops which were intended for juniors, but it has been found so useful that a third has been ordered, which is to be placed in the Faraday workshop. The balance bench is merely a long narrow table (2 feet by 12 feet by 3 feet 6 inches high) covered by a glazed case for the protection of the balances. In fact, instead of having a number of balances within separate glazed cases, one large glazed case has been provided to contain a number of separate uncased balances. The balance table is approached on either side from the working benches and is arranged at right angles to these. Four boys can work at either side and one at each end. The glazed fronts are hinged at the bottom to the table top and drop down. Holes are made in the table top wherever desirable underneath the balance pans, so that objects may be suspended from the balance pan and weighed, for example, in a pail of water underneath the table. The arrangement has the great advantage that the teacher has the scholars under complete control and is able to see whether they are weighing properly. The balances placed in such a case are those required for all ordinary work. There is no difficulty in dealing with the more delicate balances required for advanced work: these are always provided with a case; and as the sensitive working parts are of agate, there is no need to keep them in a separate room. They are conveniently placed on brackets against the wall.

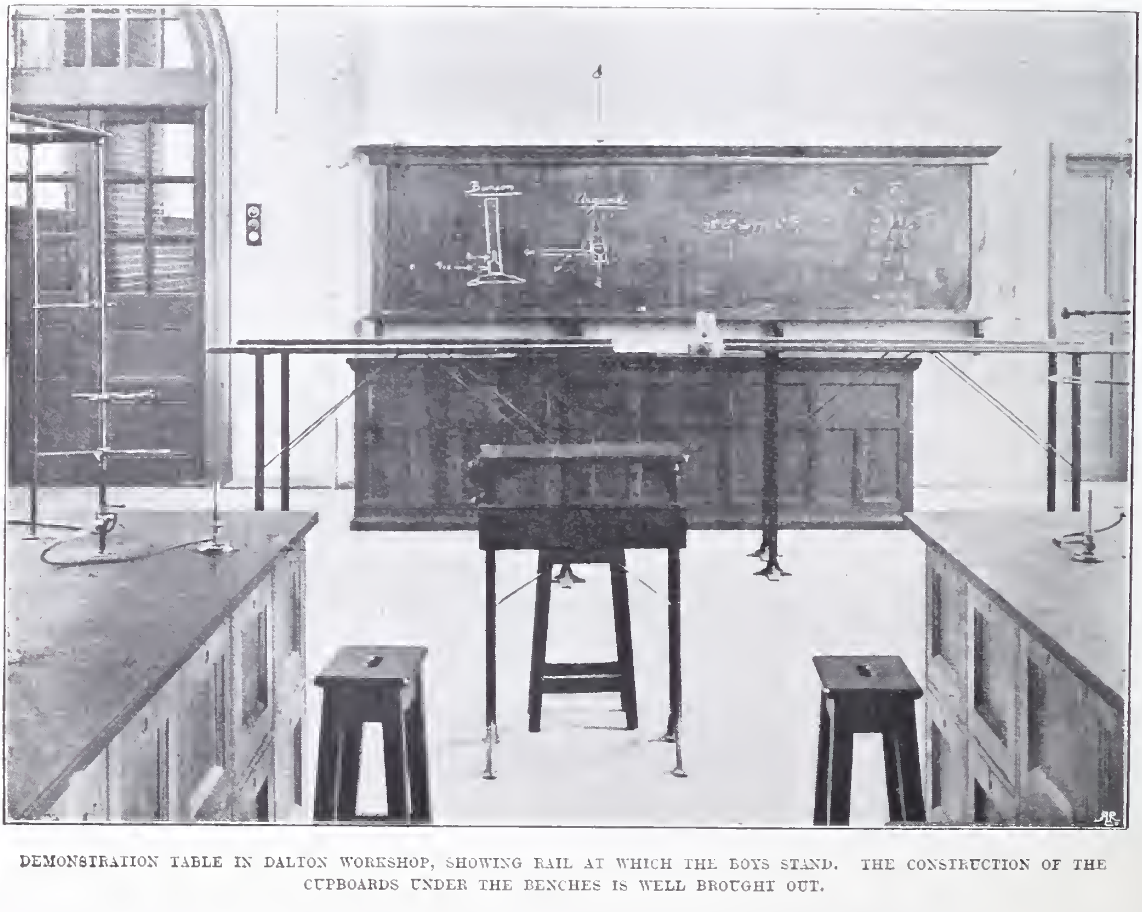
Store Room.—A third special feature of importance is the store or stock room attached to each of the four workshops. This is intended not only for the ordinary stores but also as a room in which the apparatus for experiments left unfinished at the end of a lesson may be set aside until the next attendance.

Working Benches.—These are of two kinds—those for ordinary work and those at which work involving the use of water may be done. The distinction is fundamental, I think. The former have teak tops; the latter are covered with lead. In days gone by, when the only science taught was analytical chemistry, there was much washing out of test tubes to be done: consequently numerous sinks were provided. To the present day, the regulations of the science branch of the Education Department specify that there should be a water-tap and sink for every two students, but fortunately the rule is qualified by an "if possible."

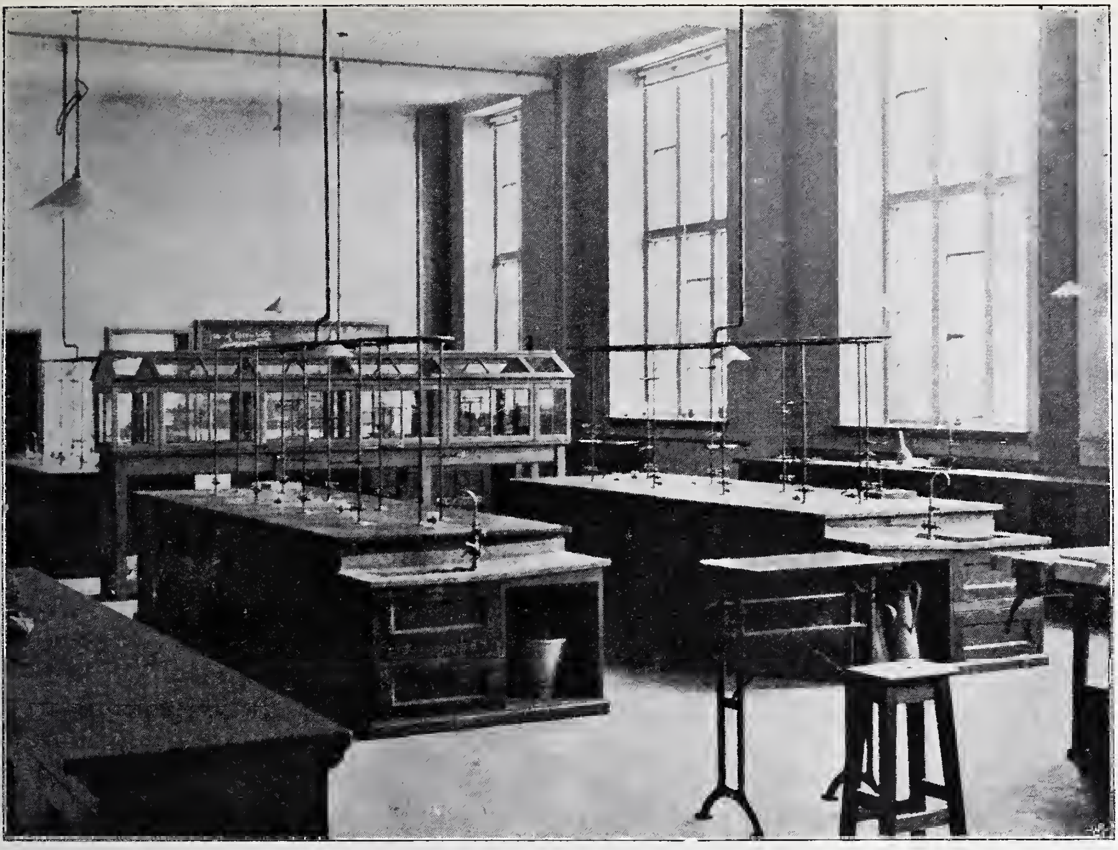
If only to prevent the general but inexcusable habit of wasting water from growing up, this regulation should be abolished. It is the more necessary to get rid of such a regulation, as it has done much in the past—and is still doing much—towards retarding the proper teaching of science in schools, on account of the expense involved in carrying it into execution; and it has



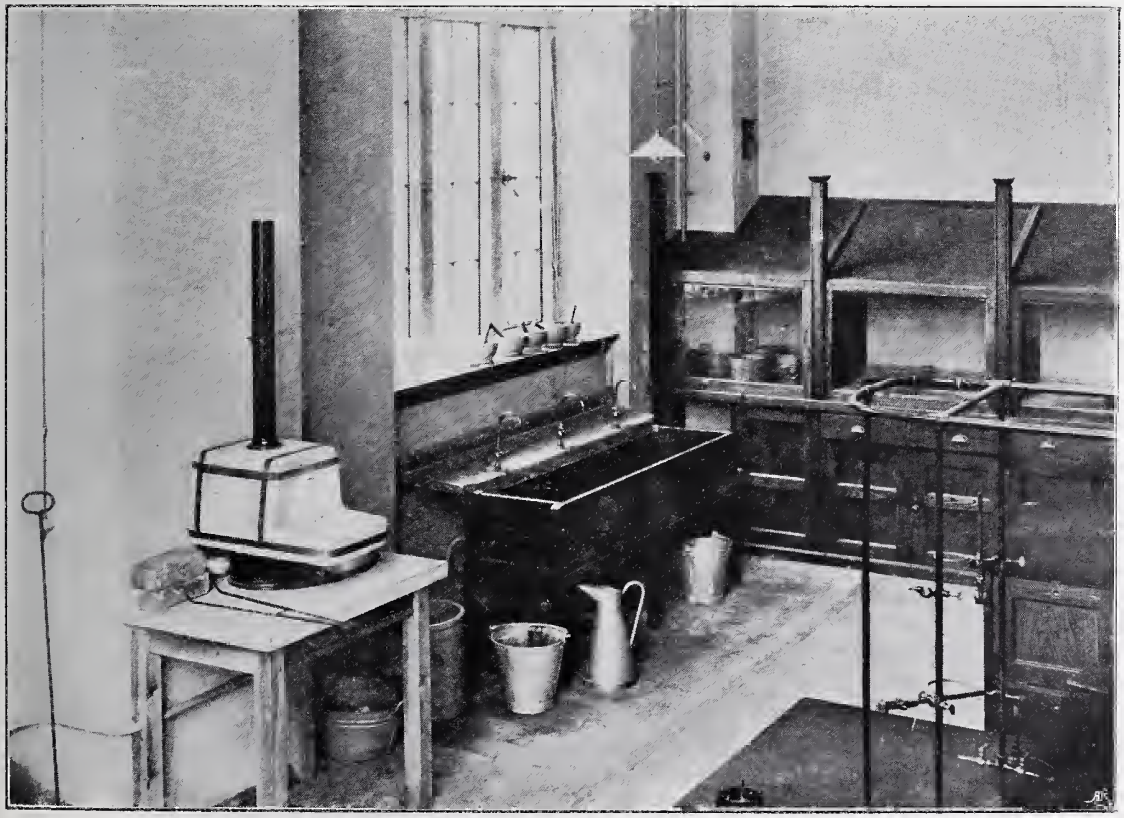
BENCH IN DALTON WORKSHOP, SHOWING THE USE MADE OF THE GAS STANDARDS AS SUPPORTS, ETC.



DEMONSTRATION TABLE IN DALTON WORKSHOP, SHOWING RAIL AT WHICH THE BOYS STAND. THE CONSTRUCTION OF THE CUPBOARDS UNDER THE BENCHES IS WELL BROUGHT OUT.

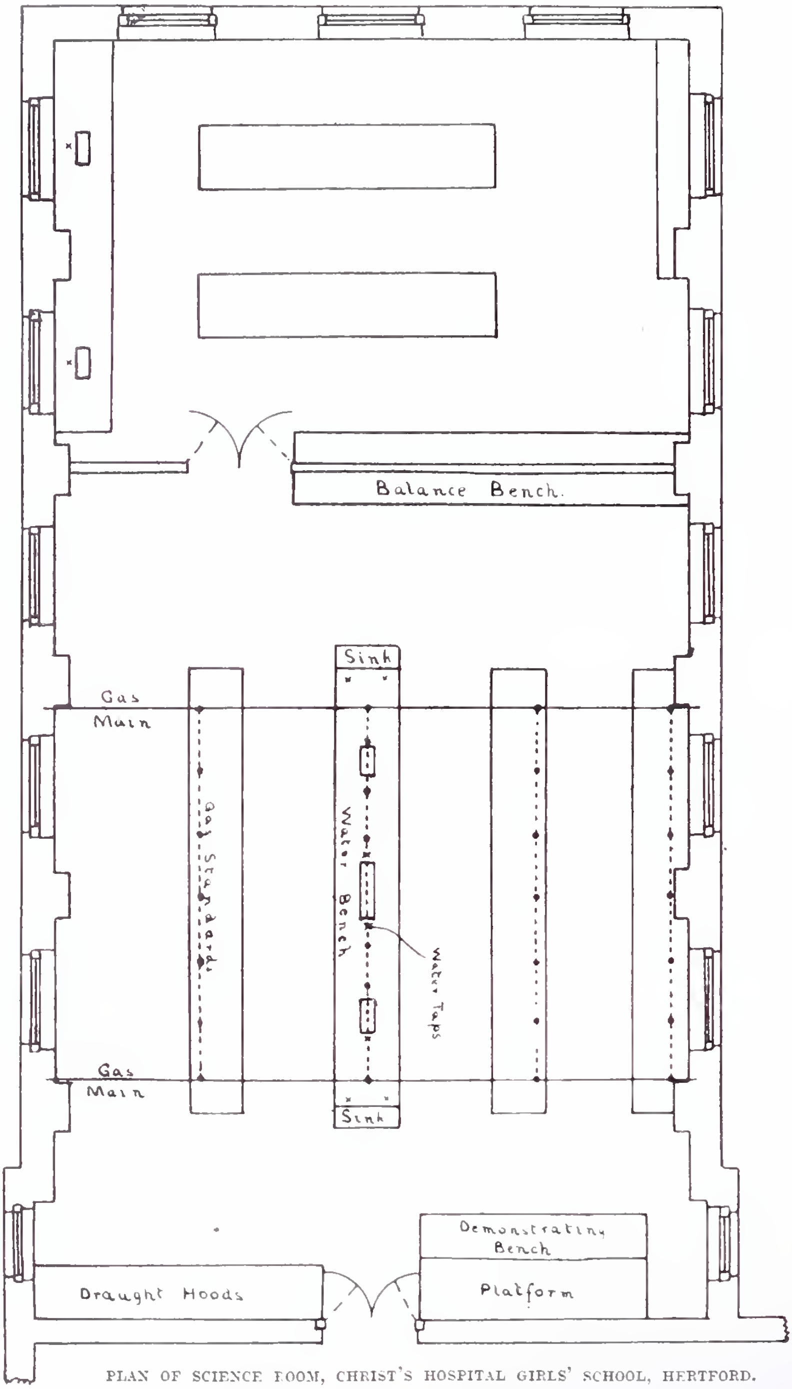


BENCH IN CAVENDISH WORKSHOP, SHOWING THE ARRANGEMENT OF THE GAS STANDARDS AND THE SINKS AT THE ENDS, AS WELL AS THE BALANCE BENCH.



LARGE SINK AND PORTION OF VENTILATION HOOD IN CORNER OF DALTON WORKSHOP.

given rise to numerous disputes, sensible people seeing that such provision is quite unnecessary. Besides the intolerable waste of water, the presence of sinks on the benches involves the constant wetting of the bench near the sink. Fortunately, the class of work now advocated for schools requires the use of water but seldom, so that there is no longer any excuse for providing sinks except in special places. But I would warn architects that they must harden their hearts on this point—as they will meet with many unimaginative teachers who will hanker after what has been, whilst others will think it so convenient to have sinks here, there, and everywhere if they do not object to allow scholars to move a few feet towards a convenience. There is no more reason, however, why sinks should be everywhere in a laboratory than there is to have one in every room in a dwelling-house so that all washing up may be done on the spot. I need scarcely point out that the economy involved in localising the water supply, sinks, and drains is very great. At Horsham, in the rooms on the upper floor, all sinks have been placed near to the walls, and the waste is carried down to the floor below in pipes fixed in chases in the walls. On the basement floor, cross channels have been avoided as much as possible.



PLAN OF SCIENCE ROOM, CHRIST'S HOSPITAL GIRLS' SCHOOL, HERTFORD.

The conventional top namper which is erected on the bench in most laboratories has been got rid of; in three of the rooms an arrangement has been substituted which provides both a gas service and upright supports to which the rings &c. required to hold apparatus can be clamped. Uprights made of quarter-inch iron gas barrel have been bolted to the table top 1 foot 6 inches from the outer edge, at intervals of about 3 feet. A few inches above the top these are fitted with crosses into each of which two eighth-inch bore gas taps (Baird and Tatlock's) are screwed. At the top, these uprights are connected together by half-inch barrel. These cross-connections form a complete circuit, which in turn is connected with the gas main brought down from the ceiling. By bridging the interval at the top by pieces of board, shelves are formed on which, for example, a vessel to be used as a reservoir may be placed; or pulleys &c. may be hung from the cross pipes, which form a gallows along the whole length of the table. If bottles are needed these can be arranged inside the uprights along the middle of the bench. If it be desired to produce a decorative effect and to protect the wood against acids, white glazed tiles having pieces of indiarubber glued to the underside by bicycle cement may be arranged within the line of uprights. What is wanted on a school bench is working space; shelves only serve to obstruct the view and to carry bottles which are rarely used.

The arrangement which I am here advocating has been carried out in a slightly different way at the Christ's Hospital Girls' School, Hertford, in the new science room designed by Mr. Stenning (see plan, p. 172). Four parallel benches about 20 feet long are arranged along the length of the room. That at the windows is suitable for senior work. The remaining three are so placed that girls may work facing the light, standing against the inside edge of the two outer benches, which have wooden tops and are provided with gas but not with water; the middle bench is covered with lead and there are three sinks in it and a larger sink at either end. The girls can turn from the *working bench* to the *water bench* whenever necessary, the one water bench serving for the common use of the two sets of girls. The sinks in this bench are mainly for use as pneumatic troughs: two are 1 foot 6 inches, and one is 2 feet 6 inches long. I venture to think some such arrangement as this is about the simplest and most common-sense plan that can well be adopted. The tops of the working benches overlap the cupboards 6 inches, so that the girls may sit and write at them. The gas standards are fixed 6 inches from the outer edge and are tied by the overhead mains which run along the benches and across the room.

Cupboards.—Both at Horsham and Hertford, the space below the bench top is fitted with two tiers of small cupboards; inside each cupboard there is a small drawer. Each working place has four such cupboards, so that four scholars may occupy the place in succession and each have a cupboard to dispose of. In the case of school work, the amount of apparatus to be stored by the individual scholar is usually small.

Sinks and Drains.—The ordinary earthenware sinks are not only more or less fragile themselves, but when glass objects are dropped into them these are invariably broken; moreover, the connection with the drain is difficult to make and always a source of weakness. Lead-lined sinks are in some respects better but not altogether satisfactory. Thirty years' experience has convinced me that wooden sinks are far the best—provided that they are built up solidly without dovetailed joints and that they are always kept partly full of water by arranging the waste so that it projects several inches (about four) above the bottom of the sink. American white wood seems to be one of the best to use. Sides and bottom should be without joints. All surfaces should be well painted with thin coal tar before they are butted; and the whole surface inside and out should be similarly coated. The waste-pipe should either be somewhat expanded or should have a conical flange burnt on by means of which it may be held in position by two blocks, one of which—fixed by screws to the under side of the bottom—serves to carry bolts by means of which a second block is caused to clamp the pipe firmly. The space between the pipe and the side of the hole through which the pipe passes is filled in with pitch. The sink is wedged up against the bench top. Such sinks may be made of any size that may be desired, and no plumber is needed to fix them. The best drain, in my experience, is a U-shaped channel formed in a concrete floor, lined with the best Portland cement and then well tarred when dry. It should be provided with a wooden cover-plate. Such a drain can always be got at. Each year during the long vacation it should be cleaned and when dry recoated with tar.*

Ventilation Hoods.—One or more of these have been provided for each of the four large workshops, but they are not yet finally arranged. Their position has been determined by that of the flues, which are not always in ideal situations. Had the fact been sufficiently taken into consideration that electricity is at disposal, there can be little doubt that the use of electrically driven fans would have been provided for from the outset and that the attempt would not have been made to produce a draught by means of gas. The trials made thus far have proved that it is desirable to use fans.

The conventional ventilation hood has many faults which are perpetuated time after time; of all the fittings it is the one which most needs study and improvement. The hood is rarely properly proportioned to the work for which it is to be used; and the mistake is almost invariably made of merely providing an exit opening without reference to its position or shape. The improvement, first introduced, I believe, at the Finsbury Technical College and subsequently at the Central Technical College—which is described in Robins's *Technical School and College Building* (Whittaker & Co.: London, 1887), p. 123, plate 50—appears to have passed unnoticed. It consists in giving the flue exit opening the form of a slot extending across the hood, so that an even draught may be produced extending from side to side of the cupboard. The squeegee fitted to the upper bar, blocking the interval between the glass of the rising sash and the bar in front of which the sash moves up and down, is another feature of importance which has been overlooked. The use of iron plates for the roof—and in many cases for the ends—may be recommended. It is easy to construct a slot flue exit in the angle which the iron roof plate forms with the wall by fixing an iron plate against the wall inclined outwards at the angle which will give a slot of the size necessary to secure an even draught from end to end, the size of the opening being determined by trial. The opening into the flue may be at any point inside the V-shaped flue-box which is thus formed. The gas-burner should always be placed below the opening from the closet into the upcast flue.

Much remains to be learnt as to the manner in which flues should be constructed for draught hoods. It is the case of the smoky chimney over again: some hoods work well, others badly, no one knowing precisely why. The subject needs to be taken in hand experimentally, and it is important that it should be studied. In any case, flues should be made wherever possible in the walls: they are always useful.

One other point of special importance may be referred to. Whatever may be the system of ventilation adopted, there should be no competition between the exits; if provision be made for the *extraction* of the air from a room by mechanical means independently of the hoods, it cannot be expected that the flues of draught hoods will work with full efficiency, if at all; the air should be allowed to escape through open windows, if not entirely through the draught hoods.

Of the two systems available—that in which the draught is secured by means of a gas jet and that in which a fan is used—it may be said that each has its advantages. If the latter be adopted, it will, I think, be found advisable to localise the draught closets, much as I have advocated should be done in the case of water supply, &c., otherwise the cost of fans, and particularly the cost of working them if electricity be used, becomes excessive. I may add that to connect up a series of hoods in different parts of a room or building and to use one large fan to produce a draught through all is not really satisfactory in practice; moreover, the construction of the necessary flues introduces special difficulties and is costly.

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* Care should be taken to arrange the drains so that they come *outside* the benches, in order that they may be easily got at. If there be any difficulty in so placing them, it is better to form a channel in the top of the bench at the back or down the middle of a double bench; this may be arranged to drain into a sink at the end of the bench, if sinks are required. Such channels are very easily provided when the bench top is covered with lead. All pipes, whether for gas or water, should be of iron. They should be fixed on the face of the walls and above the bench-top. It is all-important not to fix such fittings within the cupboards. Sinks such as I have described have been made to my entire satisfaction by the Bennet Furnishing Company.

The use of gas has the advantage that small hoods may be worked economically—so that they are to be recommended in cases in which only the occasional use of the draught hood is contemplated. But I may here utter the caution that no acid fumes should be allowed to escape into the air and that draught hoods are therefore essential wherever chemical work is to be done. I am sure it will be found in cases where electric lighting is adopted that the wiring will perish rapidly unless the precaution be taken to soak the leads in molten paraffin wax before fixing.

Special Appliances.—At Horsham, a carpenter's bench with four vices is placed in two of the rooms (Cavendish and Dalton), provision being made for storing tools and other general requisites in drawers and cupboards in the somewhat specially fitted bench marked "Bench with zinc top." The top of this bench, it may be mentioned, is intended for use in cutting out cardboard &c.

A small room on the extreme left of the ground floor is fitted with two lathes (wood and metal), a drill and a circular saw, which are driven by an electro-motor. As the man in charge of the workshops is a skilled mechanic, it will be possible to have a good deal of simple apparatus made on the spot by the boys—so that the manual training work will to some extent be co-ordinated with the experimental work.

A dark room for optical experiments has been partitioned off from the Faraday workshop. A dark room for photographic work is provided on the upper floor. This latter, it may be pointed out, is an all-important adjunct to the science workshops.

Arrangements for muffle and other furnaces are being made in several of the rooms.

The experience I have of school requirements, especially that gained of late in arranging the fittings at Horsham and Hertford, leads me to think that, by taking into account more carefully than has hitherto been done the character of the fittings to be introduced at the time of designing the building, it will in future be possible to improve considerably upon the arrangements which have been made in the Christ's Hospital Schools, especially in the direction of simplification.

The ideal to be aimed at, I think, is to have the whole of the room, both floor and wall space, available for the work which is to be done in it.

Wall space is invaluable for a variety of purposes—for many mechanical and physical experiments, for black boards, for shelving, &c. I would, therefore, advocate that no benches should be fixed permanently against the walls, but that all benches should be placed out in the room; also that projections into the room should be avoided and that the windows should be inserted at least six feet above the floor. There would then be an uninterrupted wall space at disposal on all sides of the room.

Whenever possible, the steam or hot-water pipes for heating the room should be carried under gratings in channels in the floor. Radiators &c. not only take up much space against the wall, but interfere with and damage fittings in their neighbourhood.

As to benches, I am much inclined to question the need of the elaborate provision which we have hitherto made. It is doubtful whether cupboards are required under the benches in schools; apart from the fact that there is not much to be stored by the individual scholar, cupboards tend to engender habits of untidiness—everything gets put away into them and the teacher cannot be perpetually looking after them. It is desirable to encourage the common use of apparatus and the habit of keeping things in set places and in good order. If sufficient shelving, racks, &c. be provided and cupboards for general use where necessary, there is little need for cupboards under the benches. In cases where it is necessary to put certain tools &c. in the hands of each scholar, it would be easy to provide simple lockers against the wall or even to give each scholar a box which could be taken "out of store" at each attendance and put under the working bench during the lesson.

I should like to see steady heavy benches of the kitchen-table type made use of in many, if not in most, cases. I have spoken already of the concentration of water supply and sinks. As to gas supply, of course it is convenient to have it at all benches: and if various grades of work are to be done in laboratory, it is almost necessary to make such provision, but I am inclined to advocate a less permanent arrangement than that usually adopted. I should like to see an overhead system of supply with provision for establishing connection with a simple main—provided with the necessary taps—which could be taken down from pegs on the wall whenever required and fixed temporarily on the bench. To call on boys and even on girls to do a little simple gas-fitting occasionally would be to give them most useful training; some one or other would always be forthcoming with genius for such work. I have previously spoken of the importance of giving eye training in schools through surroundings—of the importance of ornament, colour, pictures, &c. Elsewhere, I have urged that an atmosphere of research should prevail in our college laboratories. From the same point of view, I would here advocate that a workshop atmosphere should pervade our school workshops; they should be arranged as and look like workshops—not like drawing-rooms. Teacher and taught should be constantly called upon to meet contingencies and difficulties—to become handy and self-helpful; and instead of being forced to stand or sit at one place during the lesson, the scholar should be encouraged to move to whatever place in the workshop is best suited for the work in hand. I am a teacher of over thirty years' standing. I have taught students of every grade. What astonishes, and indeed appals me, is the absolute inability of almost all the students I meet with to help themselves. I therefore feel that our schools must take the question of hand and eye training seriously into consideration.

For such benches as I have advocated, it is unnecessary to use hard wood. But whatever wood be used in the science workshop for the tops of benches, it should invariably be thoroughly coated with paraffin wax by ironing this in with an ordinary hot iron. Oil is useless as a protection against chemicals.

Sooner or later a wooden bench top always becomes much stained and disfigured; unless it be exceptionally well made, cracks are sure to develop. All these difficulties are overcome by the use of lead-covered benches: a long experience leads me personally to prefer these to all others. The lead should be dressed carefully over the edge of the bench; a *stout* hard-wood bead, projecting about half an inch above the bench top, should then be fixed against it, using cups and screws. A simpler plan is to clamp the lead firmly at its edge by a hard-wood bead screwed down upon the table top an inch or so in from the outer edge of the table. Before fixing the bead the surface to be hidden should be well painted, so as to make a water-tight joint. Solder should never be used in making joints in any lead work; joints should always be burnt with the blowpipe.

A few words may be said here specially with reference to girls' schools. No doubt, until teachers become more imaginative and less anxious to adopt conventional fittings, they will desire to have very formal arrangements made for experimental work. If the teacher insist on having the working benches placed in front of a demonstration table, a water bench may well be fixed flanking the benches on the one side; whilst on the other flank—assuming the door to be in the middle of the wall—the space on one side of the door may be occupied by draught hoods and that on the other by a balance bench. But provision should be made even in the case of girls for some use of tools. Most householders must have experienced feminine incapacity to understand screws, leading as this does to the gradual disappearance of the screw nuts from domestic appliances; and they must have wished that their womenkind had some soul for such matters. The chief development must come, however, in connection with the rational study of domestic requirements: it may not be necessary nor desirable to teach our girls at school to be cooks: but they *should* learn there to understand the fundamental principles underlying cookery and all other kinds of domestic work—it should be woman's pride to do this. Men have long been victims of academic prejudices, but are seeking to throw them off; unfortunately the disease is now being contracted by women, and we have to deplore the all too literary bent of the curriculum in girls' schools, whether primary or secondary. By making liberal provision of space for domestic workshops, the architect may do much to turn the tide.

With regard to the treatment of wall space, as much as can be spared here and there should be properly prepared so that it may serve as a blackboard; or the special black canvas, so much used in America, should be fixed against it by battens. The old-fashioned small blackboards, like slates, are fast disappearing, with advantage to teachers and taught. Wherever there is spare space, stout battens should be fixed to the wall a few feet apart—when these are provided brackets, &c., may be fixed up at any time.

Lastly, I may point out that if it can be provided a flat roof is very valuable for many purposes—for experiments on the growth of plants, for photographic work, &c. Also that it is desirable that a number of beams be fixed firmly to the ceiling joists, from which pulleys &c. can be suspended.

I have said nothing directly with reference to the science workshops in colleges as distinct from those for schools. In minor matters these differ considerably from school workshops, but not in principle. I have long made up my mind that if I were called on again to design a laboratory, I should greatly simplify the fittings and follow as nearly as possible the model of the well-arranged factory.

The Board of Education has recently issued a series of rules to be observed in planning and fitting up public elementary schools, which include rules for the fitting up of a science room in ordinary schools and also for laboratories in higher grade elementary schools. The latter undoubtedly tend to favour over-provision from the point of view of this paper.* The inspectors who are called on to administer them have usually been brought up in the lap of luxury and have not learnt by sad experience to come down to the level of ordinary life. Large sums are being spent all over the country at the present time under such influences. It is not merely that much more money is spent than necessary: what is far worse, a false complexion is put upon the work—it becomes drawing-room practice and not workshop practice; when the scholars go out into the world, they find themselves placed under altogether strange conditions, unable to use the ordinary tools and unable either to fit into or to follow the ways of ordinary life. The outcome is most serious; some action must be taken to put the schools on a simpler footing and to bring their work into harmony with ordinary requirements. Sir William Abney, the present head of the science branch of the Education Department, is so well aware that what is most wanted in a science workshop is space that we may hope that he will so modify the regulations as to make this the essential feature in them; and also that he will emphasise both in the regulations and in instructions to Inspectors the importance of securing simplicity in the arrangements.

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* It is implied that distinct physical and chemical laboratories are desirable. I venture to urge that the very contrary is the case—there should be no specific mention either of chemistry or of physics in an elementary school, whatever its grade, and scarcely in a secondary school. Science in its relation to common life is the subject that schools should endeavour to teach; this touches on many branches.

In conclusion, I venture to urge that some attempt should now be made to standardise the requirements both for elementary and secondary schools.

DISCUSSION OF DR. ARMSTRONG'S PAPER.

The President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair.

Captain Sir WM. DE W. ABNEY, K.C.B., F.R.S., who was called upon by the President, said that in such an assembly he felt very diffident in saying anything about science fittings; still, he believed he was the first to bring out any fittings at all for a laboratory. More than thirty years ago, when he first went to teach chemistry and physics at Chatham, there was no laboratory there of any description, except a rough shanty of a place, and he, with the help of Mr. Valentine, a well-known teacher, had to get out a plan for fittings. Those they devised were not perfect by any means, but were good of the kind for that period, when there was a great deal of chemical analysis taught, but very little of the other part of chemistry found now to be so necessary. The pupils he had to deal with were of a very varied nature. They began with a bugler and ended with the colonel; so that laboratory accommodation had to be provided to suit all classes of men. They had to guard, for instance, against the possibility of the bugler squirting nitric acid into the colonel's eyes from the opposite side of the bench! That was one reason why they adopted the top-hamper system at their benches, which Dr. Armstrong now condemned. It was necessary to avoid injury to the eyes which he knew from practical experience had taken place on several occasions. When some years ago he came into the office of the Science and Art Department, they had only one or two laboratories; he had lived to see, however, the advent of at least a thousand laboratories all over the country. His first duty at the office of the Science and Art Department had been to get out some kind of working drawings by which people might make benches for fitting up laboratories. He might say that they took as a model those that had already been put up at Chatham, modifying them to a certain extent to meet difficulties which he noted Dr. Armstrong had recognised in his Paper. Where, for instance, advanced work had to be done, a certain amount of water had to be available close to the benches. In a secondary school, such as Christ's Hospital, it was perfectly possible to have two or three sets of laboratories—one for elementary work, one for intermediate work, and one for more advanced work, and so on—but in the laboratories he had to inspect it was impossible to have more than one, so that they had to provide for both elementary and advanced instruction in the same laboratory, and at the time it was thought better that there should be this supply of water on the benches, together with the sinks which had been so well condemned by Dr. Armstrong. He was not going to defend them; they were useful at the time, but, like many other things of ancient history, they had ceased to be of value in the eyes of modern scientists. The Secondary Science branch, of which at the present moment he was the head, had gradually relaxed its rules as regards the fitment of laboratories; it was sufficient almost that there was a table, perhaps little more than the rough stout kitchen-table spoken of by Dr. Armstrong. In old days the Government gave grants for laboratories, for which the schools were liable; and the Government liked to have something tangible that they could seize in case the school did not pay its proper quota. Now, the Government had no lien upon laboratories and fittings, and schools were therefore left with much greater freedom than before. He thought that Dr. Armstrong had been a little rough upon the Board of Education. As regards their requirements he would read the regulations recently issued by the Board—regulations which, he believed, were drawn up with the aid of a distinguished member of the Institute. The science-room, the regulations stated, was to be "a room suitably fitted for elementary practical work in science"—that was pretty wide—and "may be provided for the use of one large or several contributory schools. Such a science-room should not, as a rule, contain more than 600 square feet of floor space"—because the science classes were limited in number. "It should be fitted with strong and plain tables, sinks, cupboards, and shelves, and, where necessary, a fume-closet. A proper supply of gas is necessary. In addition to a science room, one of the ordinary class rooms may be fitted with a simple demonstration table and gas and water supply. But a special lecture room cannot be approved in an ordinary public elementary school." Those (Sir William Abney continued) were the whole conditions that were required for a public elementary school. As regards the higher elementary schools the conditions were as follows:—"Every higher elementary school should be provided with suitable laboratories." "The laboratory accommodation must be sufficient to provide at one time for the largest class in the school." "There should generally be one laboratory for chemistry and one for physics." He did not think Dr. Armstrong could object to that. "A laboratory should afford 30 square feet of floor space for each scholar; the minimum will therefore be 600 square feet; but it is as a rule desirable that the laboratory should be somewhat larger." Space, again, it would be seen, the Board considered absolutely essential. "If, however, the laboratory accommodates more than twenty-five scholars, a second teacher would be required. Laboratories must be fitted with suitable tables" (what kind was not stated; they might, therefore, be rough kitchen-tables) "which must be well lighted: they should be properly supplied with gas and water. For chemical laboratories sinks, cupboards, and the necessary fume-closets must be provided. A small balance room may be provided if desired. In addition to the class rooms and laboratories a higher elementary school may include a lecture room, which should be fitted with (1) a demonstration table furnished with a gas and water supply and a sink, (2) a fume-closet. A lecture room should have an area of about 750 square feet. If no separate lecture room is provided each of the class rooms used by the third and fourth year students should be fitted with a simple demonstration table," and so on. Those (continued Sir William Abney) were requirements which he thought Dr. Armstrong would allow were pretty free, and would meet his ideas of what a workshop should be. He was not responsible for those rules, but he was for those of the Secondary Branch, which were about on the same lines. He might say that there was the utmost freedom given to architects if there was anything they liked to propose, and he was quite certain that the Board of Education as such would not object to anything in reason. Referring again to the benches, speaking for himself he demurred to doing away with the top hamper. He had not dealt with the same class of students that Dr. Armstrong had; but in his experience as a teacher he would not have been without that protection for the eyes on any account, for where work had been done at benches without such protection some very serious accidents had taken place. He was inclined to think that it was the apparatus-maker that Dr. Armstrong should put into his crucible; it was the apparatus-maker who was responsible for a great many of the defects of the present fittings; and if he could be improved a good work would be done for science. The wooden sink suggested seemed admirable, and it was a good plan to collect the solid sediment at the bottom of the sink rather than to send it down the drain-pipe. As regards the flues, he fully agreed with Dr. Armstrong; so far as he could gather from the description they had been most excellently thought out. Before sitting down he should like to propose a vote of thanks to Dr. Armstrong for his very suggestive Paper, and for the enormous amount of trouble he had taken to bring before them the details of such a well-thought-out scheme as that of Christ's Hospital. It was not often that they had the advantage of hearing Dr. Armstrong on the subject of this practical work. They knew him very well for the great educational work that he had done, and they must thank him very heartily for having descended from what he might call the literary side to the practical side with which they all had to deal.

Mr. W. D. CARÖE, M.A., F.S.A. [*F.*], who rose at the instance of the President, said he had very much pleasure in seconding the vote of thanks to Dr. Armstrong. It was a great pleasure to them to see some of the inner works of the very fine block of buildings which the President had erected at Horsham. It had been his privilege, under the President's and Dr. Armstrong's guidance, to have it explained on the spot, and to see all the fittings about which they had had that evening so very clear and specific a statement. What struck one most with regard to those fittings was their great simplicity; and they should certainly owe a debt to Dr. Armstrong if he could induce others in the same position as himself to lighten the burden of architects who had to devise and supply the extraordinary elaboration of modern science room fittings; in fact, he could conceive nothing that would be better received among them as a body. At the same time he felt he must congratulate the President very heartily on the fact referred to by Dr. Armstrong, viz. that the President had been able to design the buildings at Horsham without regard to the fittings at all in the first instance. It did immense credit to his foresight that everything had turned out so admirably and appropriately. His (the speaker's) own qualifications for making any remarks upon such a technical subject were not very extensive. His connection with it had been mainly in the rather invidious position of criticising the fittings devised by others. He had, however, in order to qualify himself to do that with some prospect of success, consulted a great many science teachers and visited a great many laboratories with the view of finding out what was the best thing to be done in the various branches. The great difficulty which confronted him was that he heard from every science teacher that the other science teachers' way of doing a thing was not the way that he recommended! In the same way in criticising the fittings of laboratories he found that they always came before him in a very different form and with very different results; and when he ventured to make some suggestion he was always assured that that was what they were recommended to do at South Kensington! Therefore he presumed that even the requirements of South Kensington were not as standardised as, he was glad to know, Dr. Armstrong thought they ought to be. Dr. Armstrong had set the subject before them in a most admirable manner. They had learned something recently of what might be called the politics of modern education. There had been a tremendous series of letters in *The Times* upon the advantage and otherwise of learning Greek in their schools and universities, and he was bound to say he had a fellow feeling with the old literary methods. But while he felt a little alarmed on reading the first page of Dr. Armstrong's Paper, he felt consoled when he came to the second, because there he pointed out, most admirably, that the subject was to be considered purely from the point of view of education, and not with a view to making technical experts of the youth in their schools. Besides simplicity, space was another matter which Dr. Armstrong insisted on as of very great importance. They as architects would gladly provide much more space than they had to do now in buildings of this kind. But in regard to that Dr. Armstrong must remember that this was a question of funds. With regard to the balances, which Dr. Armstrong had specially referred to as being best in the centre of the room, he had been told over and over again by science teachers that it was a matter of the greatest importance that the balance-room should be so placed that the fumes from the laboratory could not enter it. Perhaps the Professor would kindly refer to that question in his reply. He was sure that Dr. Armstrong was right about the use of wooden sinks. He had examined various classes of sinks, earthenware sinks, lead sinks, and even enamelled iron sinks, the latter, of course, used with disastrous results. At Cambridge Professor Liveing preferred, he believed, to use earthenware sinks, and it would be found there that in a good many instances they had lost their glaze. That did not matter, however; all he wanted was a substance which was quite impervious! The question of aspect was one upon which architects, who were not necessarily chemists or physicists, should be enlightened especially. He noticed on the Hertford plan shown that some of the girls faced one way, some the other way, and some a third way. Now there were only four points of the compass, and one of those ways must be, he thought, a way which might not suit all technical teaching, and therefore he ventured to question the arrangement of that plan in several respects, although he said it with bated breath, as he was afraid it was one of the plans which once passed through his hands. The question of ventilation of fume-closets was one that should have their deepest attention. Many would remember the unfortunate accident which happened at Cambridge a year ago, when a demonstrator was killed while experimenting in the combustion room. The cause of the accident, he believed, had never been accurately ascertained, but it was supposed to have taken place from the fact that the fume-closet had a little gas jet in the outlet and that the fumes of the chemical he was experimenting with ignited and blew the whole front of the fume-closet out into his face. It suggested itself at once that the use of gas in such a position ought to be avoided. No doubt matters were greatly simplified by the use of electrical fans, and it was a little surprising that they were not used more often. But there again they were met with difficulties; no one had yet invented an electrical motor which would be even fairly silent with an alternating current, and the alternating current of course was very largely introduced by electrical companies because of its cheapness. That was a strong reason against the use of the alternating current altogether, because there was no doubt that the electrical motor would come more and more into use, and to work in the buzzing sound of an alternating current motor was a most unpleasant and disagreeable process. He should like to ask the Professor's views as to the placing of fume-closets in the windows, which some ten or twelve years ago was a very favourite arrangement, and one that he had heard spoken of very highly indeed. There was, of course, the great advantage of light, and it was a convenient way of disposing of the fume-closets if the windows were brought down to within about three feet of the floor. On the other hand it used up a large amount of valuable wall-space. One of the great innovations which Dr. Armstrong had suggested was the obliteration of the sink from the working table. This was a matter which might be very suitable indeed to classes of boys, but with advanced students in colleges there might be another aspect of the question. One of the most interesting laboratories he knew—the Practical Chemistry Laboratory at Liverpool, erected by Mr. Waterhouse—was in the form of a theatre: there was a working table before the demonstrator's table, and in every row of the theatre there was a working table for each of the students, so that the same experiment could be carried out by everyone in the room at the same time. In cases of that kind, and in cases of examinations, where much moving about might be awkward, the provision of water on the working table could hardly be avoided. If Dr. Armstrong could show how it could be avoided in such cases he for one would be exceedingly grateful, because the difficulty of getting it away, providing drains, &c., which were not acted upon by the chemical fumes, was very great. They were all very grateful for the interesting and suggestive Paper which Dr. Armstrong had given them, and not least for the views they had had of the admirable building at Horsham.

Mr. JOHN SLATER, B.A. [*F.*], said that Dr. Armstrong's Paper showed them the importance of the scientific and technical education being given at a much earlier age than used to be the case. He could imagine the advantage that Dr. Armstrong would find if his pupils at the Central Technical College came there after a course of training in a school such as that devised for Christ's Hospital at Horsham. He was delighted to hear the remark which fell from Dr. Armstrong, that although it was not his province to consider ornament he nevertheless thought that money spent on judicious ornamentation would always be well spent. That was a fact that could not be too widely made known and insisted upon. In London and in all the large provincial towns their Board schools were admirably fitted and admirably found in all respects; yet the interior aspect of the class rooms was of the dullest possible character. Most towns had art schools doing admirable work: why should not the municipalities endeavour to get these art schools to do something to decorate the Board schools? Such a step would be of the greatest advantage to both. With regard to the many technical details dwelt upon by Dr. Armstrong, the question of sinks was a very important one. It was a curious thing that, although it had been known for centuries that ordinary wash-tubs were best made of wood, until quite recently nobody had thought of using wood for sinks. There was no doubt that wood was the best material. In lead sinks the lead buckled and had to be renewed; but there was no such disadvantage with wood. Again, with regard to blackboards, there was no doubt that Dr. Armstrong was right: the ordinary small blackboard was practically useless for teaching purposes. In a large school with which he had to do, he had the whole of the end of the room next the platform where the master sat covered with cement with a very fine face and then blackened: this was used as a blackboard, and had answered very well. As to the question of warming class rooms and other school buildings, there was no doubt that radiators were a great mistake. Wood fittings near a radiator warped and cracked in all sorts of ways. He agreed with Dr. Armstrong that many difficulties were got over by underground passages with gratings to admit hot air into the room. Ventilation had been much facilitated by the use of fans driven by an electrical motor; and the question of the alternating current would not enter into cases where the school had its own installation. It was only when the companies supplied the alternating current that complications arose, and even then there was no great difficulty in transforming the alternating current into a continuous one.

Mr. J. J. STEVENSON, F.S.A. [*F.*], said it was many years ago since he was appointed to build Professor Liveing's laboratory at Cambridge, and his experience in that and in other cases led him to recommend architects who had such work to do not to go to it with preconceived opinions. Professor Liveing had been waiting for his laboratory for a long time, and had accumulated a mass of data of what he wanted, and had prepared a plan and a rough elevation. He told him that he wanted a factory chimney 100 feet high, and had no objection when asked if he minded its being square. He thought at first of making it like a tower, but afterwards saw that it was best to make it a good honest chimney to a certain degree ornamental. The door was shown to one side, but he had no objection to its being in the centre. He (Mr. Stevenson) considered it his function to carry out practically what Professor Liveing wanted, and to put it in the best architectural form. They had no differences in carrying out the work. After the building was finished, Professor Liveing wanted all the great squares of the windows with stone mullions to be filled with sheets of plain glass; it had been designed with small panes more like an ordinary workshop. They calculated how much more this would cost for window-cleaning, and found that it was not such a sum as made it worth while to make the alteration. The laboratory was ventilated by the chimney he had referred to; Professor Liveing found no fault, but probably a new professor coming would have a good many changes to make in this or the other arrangements to suit his ideas. There was an elaborate system of carrying the ventilation some considerable distances along the ceilings of the rooms to the chimney, in continuous wooden troughs, which he believed worked well. For additional ventilation the rooms were made as far as possible with windows on two sides, so that a draught could be got across them. With regard to the use of wood for troughs, in the Morphological Laboratory at Oxford, which Professor Ray Lankester got built, where small animals were dissected and the cuttings had to be got rid of as soon as possible, Professor Lankester devised a continuous trough in front of the benches, with a slight slope in it, which was intended to clear out and carry off the animal matter dissected. These troughs had to be carried under the floors, and to be accessible in every case. The system, he believed, had worked fairly well. As to wooden troughs and wooden down-pipes, and having as much wood as possible for what one might call the plumbing, all these had been adopted in both laboratories. As regards women having anything to do with jobbing work, which Dr. Armstrong had referred to, he should like to mention that a young lady he knew had been appointed by Miss Dove, at High Wycombe, to teach the girls all sorts of useful handiwork. He believed they never needed to go outside the school for mending a window or doing little jobs of that kind.

Miss WALTER, Inspector to the Board of Education, South Kensington, who was invited by the President to make a few remarks on the subject, showed a plan of the new science buildings of Colston's Girls' School, Bristol,* which had been passed by the Board of Education. The building, Miss Walter said, had nothing on the lordly scale of the Christ's Hospital workshops, but it contained two big laboratories—one designed mainly for physical, and the other for chemical work, but identically the same in construction. Each contained four working benches about fourteen feet long by two feet six inches wide, with a gangway between them of nearly four feet. A demonstration table two feet wide was placed parallel to the benches at one end of the room; a gangway of about three feet separated this from the front bench. A large blackboard adorned the wall behind the demonstration table, and a long fume cupboard (about five feet long) was placed on one side of the blackboard. Each room measured about thirty-two feet by twenty-six, which gave an admirable size and shape for a laboratory to accommodate something like twenty-four pupils—*i.e.* six at each bench. The Board of Education's requirement of three feet six inches length of bench for each student was for *examination* purposes. The main point in every laboratory was that the teacher should be able to see every pupil, and that every pupil should be able to see the teacher. That axiom really included the other one—that the balances should be in the laboratory, and not in another room set apart for them. The two laboratories she had referred to were provided with long side benches, upon which the balances were to be placed. They would be covered in the manner suggested by Dr. Armstrong. The balances did not require the whole length of the side benches, so one or two fume cupboards were placed along the wall. Besides the two laboratories there was a small room to be used for a preparation room, or to accommodate a few senior girls. It was also fitted with a carpenter's bench. All the work usually done in a separate demonstration room could be done in both these rooms, and the old-fashioned conventional distinction between "theoretical" and "practical" work could thus be avoided. Referring again to the necessity of the teacher being able to see everybody working, in the old days people who did any scientific work were usually at least sixteen. Nowadays pupils began such work at twelve, and even younger, and although they were called students they were really children; hence they might well be guilty of playing if they thought they could not be seen. For the benches at Colston's School there were no high erections for carrying bottles, and the girls worked only on one side of the bench. That was carried out in the scheme at the girls' school at Hertford which Dr. Armstrong mentioned; but at Colston's School everybody faced the same way. Such bottles as were constantly required were placed in three rows on tiles—one across each end of the bench and one along the centre. Although the bench accommodation allowed for twenty-four pupils, who could be worked in twelve groups of two, she believed the aim of the school was to keep the number, if possible, down to twenty, that being quite enough for one teacher to look after. The halving of the benches and allowing pupils to work only on one side also got over the difficulty that Sir William Abney referred to, that the young people might squirt things into each other's faces. That, she thought, was a very important point about a modern laboratory—that the benches should be only $2\frac{1}{4}$ or $2\frac{1}{2}$ feet wide, and that the pupils should face one way. These points were most valuable helps to the teacher.

The PRESIDENT, in putting the vote of thanks, said that he should like to say that when Dr. Armstrong kindly undertook to read this Paper he (the President) did not know that it was his intention to make the school at Horsham the principal illustration. With regard to the laboratories, it was quite true that they were not built to suit Dr. Armstrong's arrangements in the first instance, because at that time there was a science teacher there who had different views. When the building was nearly up to the first floor, very fortunately the Royal Society appointed Dr. Armstrong as one of the governing body of the Hospital, and the internal arrangement of the science building was altered to meet the views of Dr. Armstrong; and he was quite sure that the Hospital owed a great debt of gratitude to him for what he had done in modelling these rooms. Of course, in a case of this sort the architects really had but a small work to do. They were responsible for the position of the science school, and giving it an importance in the building scheme which, as Dr. Armstrong said, had not generally been given, a science school being usually stowed away in an out-of-the-way part of the buildings. But after that was done, the work devolved almost entirely upon Dr. Armstrong. The fittings he had shown that evening were carried out entirely from his instructions, and they merely acted as draughtsmen in drawing them out. The great change made was the sweeping away of the class rooms and lecture rooms previously arranged for, and providing the large laboratories with space for the classes to take place in the workshop itself. As a matter of fact, in that particular school there was not a lecture room in any part of it. There were simply class rooms and large halls and workshops of the kind described. With regard to fittings, and especially sinks, he (Mr. Webb) had had a great many of these fittings to do under different professors at other places, and he had been impressed with the large use they made of tar. They liked all the sinks and drains to be tarred, and so too the troughs which carried the waste from the sinks under the desks: all agreed that the best way was the V-shaped wood troughs, tarred inside. In another case he was trying to utilise a mixture of tar and sand for the joints of the drain pipes, because this pitch and tar seemed to be less affected than anything else by the acids thrown down the sink. It was an extremely simple and inexpensive thing, and, as Dr. Armstrong said, the plumber had nothing to do with it—although, with regard to that, he thought that a good plumber was a most excellent individual, though a bad one was of course a *very* bad one. As regards the heating of the laboratories he could not agree with Mr. Slater that pipes under the floor, with a grating over them, were the best system. They should be brought above the floor. He was inclined to think that the plenum system of warm air, admitted under slight pressure, was the best means of heating the rooms, because it disposed of the difficulty of hot and cold iron which in a physical laboratory especially was a great difficulty. By using the plenum system they got rid of all fittings entirely, and in one large instance, now being carried out, the plenum system had been adopted for that reason. But at Horsham, where the buildings were of such an extended character and so scattered, it would have been impossible—or at least they came to that conclusion—to adopt the plenum system successfully.

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* Head Mistress: Miss Hughes. The architect of the building was Mr. Gough, of Bristol.

Dr. ARMSTRONG, in the course of his reply to the discussion, said it was a peculiar pleasure to him to hear Sir William Abney speak on this matter, knowing, as he did, the extraordinary services Sir William had rendered to the cause of practical work in this country. Sir William Abney had been behind the scenes the whole time, and, more than any man, almost alone, had exercised a most important influence in developing practical scientific teaching in the schools controlled by his Department. If he (Dr. Armstrong) had criticised the regulations of the Board of Education at all, it was with the object of leading to a stopper being put, so to speak, upon the enthusiasm of some of those who had to look after the fitting-up of laboratories in schools; because although, when interpreted by Sir William Abney, the regulations which had been laid down could not be objected to, yet there was no doubt that those regulations had too often led to excesses when administered by people who had been a little less thoughtful and were far less accustomed to work in simple ways. Sir William Abney's laboratory ought to have been photographed and carefully recorded by Sir Benjamin Stone before it was destroyed some years ago. It was a curious shanty erected in the corner of a lumber room in South Kensington, and in that shanty some of the most accurate scientific work had been done that could possibly be done. A man who could work so successfully as Sir William did under such conditions was not likely to put too high an interpretation upon rules such as had been recently issued; but men brought up under different conditions would not interpret them so judiciously. With regard to the questions put to him, Mr. Caröe stated that he had been told that the balances must be so placed that the fumes could not get at them. Now, however delicate the construction of a balance might be, he thought that the construction of young people's lungs was still more delicate, and that young people ought not to be put in a place where a balance could not be put with safety. If they could put young people into a laboratory, they ought to be able to put balances there. Fume closets in the windows worked admirably in many cases. The latest laboratory built in Germany, Professor Fischer's in Berlin, had all the fume-closets arranged in the windows. It was a very good arrangement to adopt in many cases, but he did not think that, as a rule, such an elaborate arrangement was required for ordinary schools. As to sinks being required in colleges more than in schools, that was entirely a question of taste; in fact, most of these moot points were questions of fashion. A person having been accustomed to one particular thing wished to have it, and would not have something else. So much depended on what one had been accustomed to. He had practically no sinks on the benches in his laboratory for advanced students. If sinks were to be fixed at all in direct connection with the benches, they should be at the ends and not on the benches: it was a common practice so to place them at the present day. In referring to the question of heating, his only object was to point out how seriously radiators or heating-pipes fixed above the floor interfered with the fittings and were in the way. If anyone wished to see how simply, and at what slight cost, ordinary rooms could be adapted for experimental work, he would advise him to go to the Central Foundation Girls' School in Spital Square, and see what was done by Miss Walter there several years ago. At a very small cost indeed, she made two ordinary rooms available, in a most admirable way, for all the work that school children need be called upon to do; and she found a single sink in each room sufficient.

9, Conduit Street, London, W., 24*th Jan.* 1903.

CHRONICLE.

The President's "At Home."

The "At Home" given by the President on Monday evening the 12th inst. was perhaps the most agreeable function ever held in connection with the Institute. Members to the number of nearly four hundred met together from all parts of the country, and the rooms were full to overflowing. This was the first occasion of a social reunion of the kind, and in bringing it about in so happy a manner the President was giving practical shape to an idea expressed in his Address last November—viz. that members should have an opportunity of meeting together in a friendly way and of becoming better acquainted with one another than was possible at the formal meetings of the Session. By the kindness of Mrs. Bentley, the President was able to afford his guests the pleasure of a closer acquaintance with the work of the late Mr. J. F. Bentley. On view in the rooms was a numerous collection of designs and working drawings of some of his principal buildings, church altars, church ornaments, screens, sculptured work, &c., mostly from the master's own hand. For the information of those who would like to study the works themselves as carried out in brick and stone, the following list is given of the drawings: St. Mary's, Clapham; St. Mary's, Chelsea; St. Mary's, Kensal New Town; St. Mary of the Angels, Bayswater; Church of the Holy Rood, Watford; St. James's, Spanish Place; St. John's, Brentford; St. John's, Hammersmith; Roman Catholic Church, Doncaster; St. Luke's, Chiddingstone Causeway; The Preparatory School, Beaumont; St. Thomas's Seminary, Hammersmith; Franciscan Convent, Braintree; Carlton Towers; Designs for Monuments to Cardinal Manning and Lady Alice Gaisford; Design for Monument at Stonyhurst College; House at Bainbridge, Yorks; Cottages at Bramley, Guildford, &c. There were also specimens of hangings in velvet and other material designed by Mr. Bentley specially for Carlton Towers. The drawings remained on view during the whole of Tuesday, the 13th inst., and attracted numerous visitors to the Institute.

THE PRIZES AND STUDENTSHIPS 1903.

The Council's Deed of Award.

To the General Meeting, 19*th January* 1903.

Gentlemen,—Pursuant to the terms of By-law 66, that the Council shall, by a Deed or Writing under the Common Seal, award the Prizes and Studentships of the year, and announce such awards at the next General Meeting after the adjudication, the Council have the honour to state that they have examined the several works submitted for the two Silver Medals of the Royal Institute, the Soane Medallion, the Owen Jones and Pugin Studentships, the Godwin Bursary, the Tite Prize, the Cates Prize, and the Grissell Gold Medal.

The Royal Institute Silver Medals.

(i.) *The Essay Medal and Twenty-five Guineas.*

Three Essays on the subject "A Comparative Review of the Various Past and Present Systems of Architectural Training at Home and Abroad" were received for the Silver Medal under the following mottoes:—

1. "All British."
2. "Ars quatuor coronatorum."
3. "Lindis."

The Council regret that they are unable to award the Medal, but they have granted a Certificate of Honourable Mention to the author of the Essay bearing the motto "Ars quatuor coronatorum" [*Arthur Troyte Griffith, The Priory Gateway, Malvern*].

(ii.) *The Measured Drawings Medal and* £10. 10*s.*

Three sets of Drawings were sent in of the several buildings indicated, and under mottoes, as follows:—

1. Iago:—5 strainers (Balls Park, Hertford).
2. Nix:—6 strainers (St. Martin's-in-the-Fields).
3. Philabeg:—5 strainers (Craigievar Castle, Aberdeenshire).

The Council award the Silver Medal and Ten Guineas to the delineator of Craigievar Castle, submitted under the motto of "Philabeg" [*Andrew Rollo, 2 Willoughbank Crescent, Glasgow*].

The Travelling Studentships.

(i.) *The Soane Medallion and* £100.

Twenty-one Designs for a Town Church were submitted, under the following mottoes:—

1. Advance!—8 strainers.
2. Bee:—7 strainers.
3. "Como":—4 strainers.
4. E Natura Architectura:—6 strainers.
5. "Fides":—5 strainers.
6. Fioretto:—4 strainers.
7. Ich Dien:—7 strainers.
8. ΙΧΘΥΣ:—6 strainers.
9. Lauda Finem:—7 strainers.
10. Medici:—6 strainers.

11. "Neni":—7 strainers.
12. "Ne Oubliez":—7 strainers.
13. "New Era":—7 strainers.
14. ΦΟΙΝΙΞ:—6 strainers.
15. Perseverando:—6 strainers.
16. "Rodari":—7 strainers.
17. Sanctus:—8 strainers.
18. Xerxes:—6 strainers.
19. X, on light blue strainers:—5 strainers.
20. X, on grey strainers:—5 strainers.
21. Device of a Patriarchal Cross:—8 strainers.

The Council have awarded the Medallion and (subject to the specified conditions) the sum of One Hundred Pounds to the author of the design bearing the motto "ΙΧΘΥΣ" [*Edwin Francis Reynolds, Malvern House, Trinity Road, Birchfield*]; and Medals of Merit to the authors of the designs bearing the mottoes "Como" [*Frank Charles Mears, 65 Sydney Street, South Kensington, S.W.*] and "X," on grey strainers [*Cyril Wontner Smith* [*A.*], *Grasmere, Hendon Lane, Finchley, N.*].

(ii.) *The Owen Jones Studentship and £100.*

Three applications were received for the Owen Jones Studentship from the following gentlemen:—

1. L. R. Guthrie:—6 strainers.
2. James M'Lachlan:—6 strainers.
3. Percy E. Nobbs:—2 strainers.

The Council have awarded the Certificate and (subject to the specified conditions) the sum of One Hundred Pounds to *Mr. Percy Erskine Nobbs, M.A.Edin.* [*A.*], 8 *Trafalgar Square, Chelsea, S.W.*; and a Medal of Merit and £10. 10*s.* to *Mr. L. Rome Guthrie*, 37 *Albert Street, Regent's Park, N.W.*

(iii.) *The Pugin Studentship and £40.*

Eight applications were received for the Pugin Studentship from the following gentlemen:—

1. J. Harold Gibbons:—6 strainers.
2. W. S. A. Gordon:—5 strainers.
3. Stanley H. Hamp:—7 strainers.
4. O. P. Milne:—5 strainers.
5. F. C. Mears:—6 strainers.
6. A. Muir:—6 strainers.
7. J. Myrtle Smith:—6 strainers.
8. P. J. Westwood:—6 strainers.

The Council have awarded the Medal and (subject to the specified conditions) the sum of Forty Pounds to *Mr. John Harold Gibbons* [*A.*], *Guardian Assurance Buildings*, 25 *Cross Street, Manchester*; and a Medal of Merit and £10. 10*s.* to *Mr. Andrew Muir*, 29 *Newington, Liverpool.*

(iv.) *The Godwin Medal and £65.*

Four applications were received for the Godwin Bursary from the following gentlemen:—

1. H. B. Creswell.
2. H. Phillips Fletcher.
3. A. Dunbar Smith.
4. A. Maryon Watson.

The Council have awarded the Medal and (subject to the specified conditions) the sum of £65 to *Mr. A. Dunbar Smith.*

(v.) *The Tite Certificate and £30.*

Fourteen Designs for a Pavilion in a Public Garden were submitted under the following mottoes:—

1. Altiora:—6 strainers.
2. Archivolt:—8 strainers.
3. Ariel:—5 strainers.
4. Caber-feidh:—5 strainers.
5. Forum:—7 strainers.
6. "Le Nord":—8 strainers.
7. Lindisfarne:—4 strainers.
8. "Lux":—4 strainers.
9. Mime:—8 strainers.
10. Mulciber:—4 strainers.
11. Pax:—7 strainers.
12. Phœnix:—4 strainers.
13. Queen of Hearts:—5 strainers.
14. St. Winifred:—5 strainers.

The Council have awarded the Certificate and (subject to the specified conditions) a sum of Thirty Pounds to the author of the design bearing the motto "Caber-feidh" [*David Smith*, 62 *Sternhold Avenue, Streatham Hill, S.W.*].

The Cates Prize: £40.

Two applications for the Cates Prize were received from the following gentlemen:—

1. Baxter Greig:—11 strainers.
2. A. Halcrow Verstage:—22 strainers.

The Council have awarded the Cates Prize of £40 to Mr. A. Halcrow Verstage [*A.*], Meadrow, Godalming, Surrey.

Prize for Design and Construction.

The Grissell Gold Medal and £10. 10s.

Eleven designs for a Stone Dome over a Porte-cochère to a large Public Hall were submitted under the following mottoes:—

1. Blunderbuss:—3 strainers.
2. Civic:—3 strainers.
3. "Duomo":—2 strainers.
4. Golden Horn:—3 strainers.
5. H.I.M.—2 strainers.
6. Notts:—2 strainers.
7. Quercus:—4 strainers.
8. Red Rose:—2 strainers.
9. "Sepia":—4 strainers.
10. White Rose:—4 strainers.
11. "Z":—4 strainers.

The Council have awarded the Medal and Ten Guineas to the author of the design bearing the motto "White Rose" [*Jas. B. Fulton, East Chapelton, Bearsden, Glasgow*].

The Ashpitel Prize 1902.

The Council have, on the recommendation of the Board of Examiners (Architecture), awarded the Ashpitel Prize to Mr. William Greenwood, of Blackburn. Mr. Greenwood was registered *Probationer* in 1900, *Student* in 1901, and passed the Final Examination in November 1902.

The Travelling Students' Work.

Owen Jones Studentship 1901.—The Council have approved the drawings and design of Mr.

J. Hervey Rutherford, who was awarded the Studentship in 1901, and who travelled in Italy, Sicily, and Spain.

Owen Jones Studentship 1902.—The Council have approved the drawings and design of Mr. Edward H. Bennett, who was awarded the Studentship in 1902, and who travelled in Italy and Spain.

Godwin Bursary 1902.—The Council have approved the Report of Mr. Chas. A. Daubney [*A.*], *Godwin Bursar* 1902, who visited the United States of America to study Fire Escapes in American Commercial Buildings.

Pugin Studentship 1902.—The Council have approved the work of Mr. C. Wontner Smith [*A.*], who was elected Pugin Student for 1902, and who travelled in Gloucestershire.

Tite Prize 1901.—The Council have approved the work of Mr. Walter Fairbairn, who was awarded the Tite Prize for 1901, and who travelled in Italy.

In witness thereof the Common Seal has been hereunto affixed this Nineteenth day of January 1903, at a Meeting of the Council.

(*Signed*) ASTON WEBB, *President*; JOHN SLATER, EDWIN T. HALL, EDW. A. GRUNING, *Members of Council*; ALEXANDER GRAHAM, *Hon. Secretary*; W. J. LOCKE, *Secretary*.

Chipping Wycombe Municipal Buildings Competition.

The conditions for the above competition contain the following clause:

"The President of the Royal Institute of British Architects, or some architect to be nominated by him, will be asked to make these awards according to his judgment; but the Corporation do not undertake to carry out any designs, and reserve the right to select for erection any set of designs (whether awarded a premium or not) they may themselves prefer."

The President desires to inform members of the Institute that, as he understands the promoters decline to modify this clause, he has been unable to nominate an assessor.

The late J. F. Wadmore [*A.*].

Mr. James Foster Wadmore, of Dry Hill, Tonbridge, who died 3rd January 1903, had been an Associate of the Institute since 1865. The following notes of his career have been kindly contributed by his son, Mr. Beauchamp Wadmore [*A.*]. He was the eldest son of James Wadmore, and was born on 4th October 1822. His father was a well-known and enthusiastic collector of pictures, books, prints, and medals, of which the greater part was sold at his death in 1853. Mr. J. F. Wadmore was educated at the Free Grammar School, Tonbridge, and subsequently studied under a private tutor in Berkshire. In 1843 he was articled for three years to the late Mr. William Grellier, and during his pupilage he attended Professor Donaldson's lectures at the London University. At the termination of his articles he gained the Medal of Merit given by the Institute for the best design for a Chapel Royal, the prize being presented to him by Earl De Grey, then President. Shortly after, he set up in business at Crosby Chambers, E.C., one of his first works being the Church of St. Michael and All Angels at Sutton Coldfield. In 1854 he removed his office to 35 Great St. Helens, and took into partnership his old schoolfellow (the late Mr. Arthur J. Baker). The early years of their partnership they devoted to competition work, such as the plans for the Foreign Office and other metropolitan improvements, and, though unsuccessful, established the reputation of their firm for good work. Mr. Wadmore designed and subsequently decorated St. Mary's, Mistley; restored St. Helen's, Bishopsgate Street; the churches at Tudeley, Kent, and Denford, Northampton, as well as the School Chapel (in 1859) at Tonbridge. With the late Mr. E. H. Burnell, surveyor to the Skinners' Company, he designed and carried out, in 1863, the new school buildings at Tonbridge School, the Skinners' Middle School for Boys at Tunbridge Wells, and the Middle School for Girls at Stamford Hill. In domestic work the pick of his designs will be found at Mistley Place, Essex, and Ferox Hall, Tonbridge. In 1888 his partner, Mr. Baker, retired, and in 1890 he was joined by his son, Mr. Beauchamp Wadmore, and Mr. William Robert Mallet, with whom he continued in business to the date of his death, though not a very active member of the firm. Mr. Wadmore was a member of the Skinners' Company and Senior Past Master at the time of his death, a Governor of Tonbridge School, the last Chairman of Old Fulham Bridge, and a member of the Council of both the Kent and London and Middlesex Archæological Societies, for whom he wrote several papers, among others the account of the Skinners' Company which was later largely added to and published in two editions dated 1876 and 1902; "Tonbridge Castle and its Lords"; "Old Fulham Bridge"; "St. Mary Magdalen's Priory, Tonbridge," &c.

REVIEWS.

ESTIMATING COST.

"*How to Estimate: being the Analysis of Builders' Prices.*" *By J. T. Rea. 8o. Lond.* 1902. *Price 7s. 6d. net.* [*B. T. Batsford, 94 High Holborn.*]

It may be accepted as a maxim that considerations of cost rule the world; but if the general truth of the proposition needs accentuation, it can at once be demonstrated by simply enumerating the meagre list of ethical principles in the human philosophy of well-regulated communities that are not influenced by questions of cost. Accepting, then, as a modern law what we may well believe in the remote past was a mere convention, it is not remarkable that counting the cost should now be an important and unavoidable branch of an architect's work. Happily, in the matter of estimates there is expected, and sometimes cheerfully allowed, a five or ten per cent. margin for unforeseen contingencies, regrettable oversights, or whatever we may be pleased to term the difference between fiction and fact, and so at the completion of a building in due course the final certificate is issued with a sigh of relief, enshrouding maybe a pious though silent hope that the client is enjoying full value for his money, and the builder a fair price for his work. We have before us a book that sheds much light upon the cost of many things—no mere schedule of prices, but a work exhibiting a serious attempt to treat scientifically the principles of estimating.

Memory recalls from the past several useful works on builders' prices, and one in particular, entitled "Estimating," published by Batsford twenty years since on emerging from publication in serial form, in surroundings, if we remember rightly, similar to those enjoyed by the work now in review. The earlier book dealt with the subject in analytical form in an admirable manner. Mr. Rea's work is, as a new book should be, a decided step forward. The excellence attained is rather in the manner of marshalling the facts than in the newness of them. The author has a concise and crisp style. Note how he deals with the cost of water-waste preventers: "There are many varieties of cast-iron water-waste preventing cisterns from 8*s.* 6*d.* to £3 each; a good one costs 21*s.*, and should hold three gallons." To ascertain the cost of such an item fixed, to the prime cost must be added the cost of brackets, chain, and ring, the labour in fixing, the labour and material in plumber's joints, and finally contractor's profit, the total producing the cost of the cistern fixed.

Again: to find the cost per foot superficial of deal or other woods in thicknesses we have set out the initial cost at the docks of a standard of St. Petersburg deals, the landing rate, loading charges, cartage to mills, cost of sawing, and estimate of waste, from which, by the aid of arithmetic and the data in the book, we arrive at the net cost per foot super. of any thickness of deal. Proceeding again from the price per foot super. as a basis, the cost of planing, whether by machinery or hand labour, is now added; then the constants of labour are brought into the calculation; something is added for waste and sundries in nails, glue, sandpaper, &c.; then comes the cost of framing and fixing; the while not forgetting contractor's profit, we may arrive on these scientific principles at the price of any item of joiner's work from a deal ledged door to the most elaborate piece of hardwood joinery.

An interesting feature in the chapter upon the various methods of estimating the cost of buildings is a schedule of cost per cubic foot at which some forty differing classes of public buildings may be erected. Another schedule discloses the actual cost of some sixty well-known public buildings at per cubic foot, and the cost per unit of beds in the case of hospitals and asylums, at per seat for theatres and churches, at per room for model dwellings, and at per quarter for breweries. From these details the author turns to the subject of mechanics' labour, and explains the use to be made of the constants given in the subsequent calculations. The author's arrangement is logical: the chapter upon each trade opens with memoranda; then follow a series of prices for materials and labour at the various units of measurement, technically known as measured work prices. Next in order are prices of materials "supplied only" in day work. Finally, we come to the scientific analysis of measured work prices. This sequence is observed in each trade, and no detail involving cost has the author considered too unimportant to be noted.

It may be that most of the standard text-books have been drawn upon in some measure for this work—where possible the sources are acknowledged; nevertheless, the matter has never before been brought together in so useful a form.

In considering the prices affixed to the various items it is well to note an important qualification. The author rightly warns his readers "that prices of most building materials have gone up from twenty to thirty per cent. within the last few years, chiefly through 'rings' and 'corners' creating artificial values: this constant fluctuation must be borne in mind in reading this book, for what may be right this week may be wrong next, owing to the sudden change in the market."

However this may be, the principles of estimating as set forth so ably still hold good. The variable values may be stated as—the initial cost of the raw material, the rate of wages, and local circumstances. Bearing these considerations in mind, one can turn to any part of Mr. Rea's book and find reliable data. To all concerned in the cost of builder's work this book should prove intensely interesting, to students it is invaluable, and to the author himself it is a monument of conscientious labour freely bestowed with great skill upon a highly technical branch of professional practice. SYDNEY B. BEALE.

ALLIED SOCIETIES.

SHEFFIELD SOCIETY OF ARCHITECTS.

At the ordinary monthly meeting of the Sheffield Society of Architects, held in the Rooms of the Literary and Philosophical Society, Leopold Street Sheffield, Thursday, 8th January, Mr. E. M. Gibbs [*F.*] delivered a lecture on "A short visit to the United States and Canada."

Mr. Gibbs explained that his visit had been a hurried one of only thirty-one days from Liverpool, of which eighteen days were spent in America, and that it was made for a holiday and a change, and that he had not made any effort to obtain any special information except as to the University buildings, and was not prepared with a lecture, but only a series of views of buildings in New York, Washington, Montreal, and Boston, supplemented by some casual remarks. In presenting views of New York he drew attention specially to the skyscrapers, and stated that they had the quality of architectural dignity so eulogised by Ruskin as "The Lamp of Power," which was due not only to their great size but to the simplicity of design and the beautiful grey granite with which they were encased. Internally many of them were rich in marbles, and several were provided with post and telegraph and messenger offices, newspaper and barbers' shops, flower stalls and restaurants, and one had a railway station attached to it. The rents for an ordinary office, say five yards square, varied from £500 on the lower, to £100 per year on the upper floors, including lighting and heating. Some of the land had cost £350 a yard, and there was said to be no difficulty in forming companies, with a promised dividend of 4 to 5 per cent., to purchase sites and erect the buildings. Most of them had been erected within the past ten years. The Park Row building has thirty stories, and is 390 feet high, the foundations being 70 feet deep. The damage by skyscrapers to the light of adjoining buildings is substantial, but as in America the law gives no protection against this, and electric light is in such universal use, there is apparently no complaint. In the views of Boston Mr. Gibbs drew attention to the Public-Library, which is built of grey granite, and cost £500,000, one of the best examples of the work of the late Mr. Hunt; and also to the Symphony Hall, which has seats for 2,680, and cost £100,000, and which is specially well arranged for convenience of access and egress by corridors all round on each floor, and has a most complete ventilating apparatus. As regards the University buildings, sites were all much larger than at present required; in each case a good general plan had been adopted, and the buildings were being erected gradually as funds came in; separate buildings were erected for separate departments, and very frequently gifts of buildings had been made by gentlemen specially interested in one department; as an instance he exhibited the plans and views of "The Robinson Hall" at Harvard University, which was for the Department of Architectural Education. Mr. Gibbs also referred to his visits to the Architectural Department at Columbia University, Massachusetts Technological Institute, and to Montreal University, and suggested that in the new University buildings to be erected in Sheffield some provision should be made for architectural education. With regard to the allegation that the American bricklayer laid more bricks than the British bricklayer, Mr. Gibbs pointed out that it was not generally known that the American brick was only 8 inches by 3 inches by 2 inches thick, which, as compared with the Sheffield brick of 9 inches by 3 inches by $4\frac{1}{2}$ inches, was less than half the size and weight. Speaking generally of the architecture of the United States, Mr. Gibbs thought that the finishing of the education of many of their architects in the Paris schools of architecture had a beneficial effect, and accounted for much of their good planning and dignified architecture.

MINUTES. VI.

At the Sixth General Meeting (Business and Ordinary) of the Session 1902–03, held Monday, 19th January 1903, at 8 p.m., the President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair, with 26 Fellows (including 11 members of the Council), 34 Associates (including 3 members of the Council), 1 Hon. Associate, and visitors, the Minutes of the Meeting held 15th December 1902 [p. 135] were taken as read and signed as correct.

The following Associates attending for the first time since their election were formally admitted by the President and signed the Register—viz. Thomas William Whipp, Baxter Greig, Richard Fielding Farrar, James Herbert Belfrage.

The decease was announced of the following members:—William Wimble [*F.*], elected 1888; James Foster Wadmore [*A.*], elected 1865; Albert Charles Breden [*A.*], elected 1892.

The Hon. Secretary formally announced the receipt of a number of works presented to the Library, a list of which was given in the last *Supplement*; and also the receipt of a contribution of £5 to the Library Fund from Mr. Sydney Smirke [*F.*], this being his fourteenth annual donation of a like sum to the Library. Whereupon, on the motion of the Hon. Secretary, a vote of thanks was passed to the various donors, with special mention of the name of Mr. Sydney Smirke.

The following candidates for membership were elected by show of hands under By-law 9—viz.:—

As Fellows (2).

THOMAS EDGAR ECCLES [*Assoc.* 1890] (Liverpool).
WILLIAM CHASEN RALPH (Wigan).

As Associates (3).

ARCHIBALD LAWRENCE HOLDER [*Probationer* 1898, *Student* 1900, *Qualified* 1902].
HORACE MOGER [*Probationer* 1894, *Student* 1898, *Qualified* 1902].
JAMES MACLAREN ROSS [*Probationer* 1896, *Student* 1898, *Qualified* 1902].

The Secretary having read the Deed of Award of Prizes and Studentships 1903, made by the Council under the Common Seal [p. 184], the sealed envelopes bearing the mottoes of the successful designs and drawings were opened and the names of the authors declared.*

A Paper by Professor Armstrong, LL.D., Ph.D., F.R.S., on Science Workshops for Schools and Colleges having been read by the author and illustrated by lantern slides, a discussion ensued, and a vote of thanks was passed to Professor Armstrong by acclamation.

Announcements having been made by the President as to the opening of the Annual Exhibition of Drawings and as to the business of the next General Meeting, the proceedings closed and the Meeting terminated at 10.15 p.m.

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* These names are now printed between brackets in the Deed of Award, p. 184, after the mottoes.

ADDRESS TO STUDENTS. Delivered by the President, Mr. ASTON WEBB, A.R.A., F.S.A., at the General Meeting, 2nd February 1903.

BROTHER STUDENTS,—

EVER since I undertook the responsibilities of this Chair, it has been present to my mind that it would be my duty and privilege to address you this evening, and I have wondered if there was anything that I could say that would be of use or help to you.

The experience of one man, valuable to himself, is seldom of value to another, especially if the other be a younger one, and in Art, perhaps, this is more true than in any other career; each must work out his own salvation, and a stranger cannot intermeddle with his joy.

I am not speaking to-night especially to those who have just entered for the various Prizes and Studentships yearly offered by this Institute. This has been kindly undertaken by Mr. Walter Millard, who is especially qualified for the task and is sure to fulfil it conscientiously and generously. I am speaking to students generally, students of what I think we rightly consider the greatest and noblest of the arts, the art of Architecture, the most abiding and the most useful of the arts. Those of us who heard Dr. Evans's recent paper on his exploration of the Palace of Knossos in Crete must have felt this as he laid bare before us the work executed by men some four or five thousand years ago.

In addressing you students I shall endeavour to give you in the briefest and most condensed manner possible the main lines on which, as it appears to me, a student of Architecture should endeavour to prepare himself for his work.

One thing I would first ask you on the threshold of your career: are you quite sure you have chosen aright? No one can tell this so well as yourself, and you will probably by this time have had sufficient experience of what this career means to form a sound opinion, and I advise you deliberately, if you have any doubt, to throw it up *now*; you will be none the worse, but all the better for the training you have had, and you will find it useful in other careers. If, on the other hand, you determine to go on, decide at the same time never to look back again. It is a career beset of course with difficulties, and one that requires a lifelong training to enable you even to keep your place in it. Remember, this training must be irksome to all who have not their heart in the work, and it will shut you out of many pleasures you will see others enjoy; it is so engrossing that you will inevitably find yourself becoming, to some extent at least, a one-sided man, a contingency which certainly should not by anyone be lightly assumed.

But, on the other hand, if your heart is in it you will find the ever-varying character of your work a never-ending delight, carrying you to many places and bringing you into contact with all sorts and conditions of men, a delight which cannot be excelled, and indeed can hardly be equalled, I think, in any other calling.

But to arrive at this you must follow it with patience. Some young men seem to expect to attain success as soon as, or even before, they are out of their articles; the majority are necessarily doomed to disappointment. Work, you will find, is necessary, and that work must be lifelong; there is no success or happiness without it.

When a young genius was brought to Ruskin, his first question always was, "Does he work?" A clever man, he says, may be indolent, but a great man never.

It is probably the ten years succeeding pupilage that are the most important in the life of most architects, and will be the all-important ones in yours. How will you use them? Then you will begin to rely upon yourself and teach yourself, and cease to rely upon others, a very important difference.

Mr. John Morley said a little time ago in a speech of his, "What a splendid thing a man might make of his own life!" He did not add, because I suppose it is so evident, "What a poor, miserable thing he often does make of it!" It is for you to decide to make a splendid thing of yours. Start with high ideals, for they will be sorely tried. A famous painter told a gathering of students a short time ago that he never painted a picture that realised the ideals he had started with; and if this be true of a distinguished painter, how much more true of lesser men!

Many years ago I read a paper on "Pupilage" before the Architectural Association, and after the paper a gentleman got up and was kind enough to say I had given them many useful hints as to how to *do* their work, would I now give them a few tips as to how to *get* it; but that was not part of my subject then, nor is it now. I will only say this, that if you take care to prepare yourselves and do the work that lies nearest to you as well and as thoroughly as you can, the work will come to you and you will not even have to trouble how to *get* it: the way you *do* what does come to you is the all-important thing. Remember Carlyle's description of common journey-work well done for want of better.

I shall take it that most of you here to-night have completed or are nearing the completion of your articles, and are about to commence your professional life in one capacity or another. You have been, therefore, through a course of systematic instruction, most necessary and most useful if a little dull, and you are now about to take a higher flight, urged, let us believe, by an ideal impulse. Do not clip your wings; the head has been educated, now it is the turn of the heart.

We will assume you have got knowledge. But with all your getting you must get understanding, get to the bottom of things and understand them. A well-stored memory is not the chief essential for an artist, though it is of great value to him. Cultivate curiosity and observation, and leave nothing unexplained. Now is your time. Some grow old without gaining any experience, through never having learnt to observe. Learn now how to learn, or you will never do it; and lead the "strenuous life." Don't be afraid of overwork; the number of people who overwork themselves is infinitesimal; the chances that you will be one of them are hardly worth taking into account.

I would recommend you, for one thing, to know as many artists of about your own age as possible, architects, painters, and sculptors; meet together as often as you can, talk what is called "shop" with them, visit buildings, paintings, and sculpture, old and new, together, criticise these things together, admire where you can and give your reasons, and when you must condemn, give your reasons also; get all you can from your friends, and give them all you can in return. The Royal Academy Schools, this Institute, the Architectural Association, and your own office will give you ample means of doing this, and you will make friends that will last your lifetime, and as difficulties arise in your work you will go to them for advice and counsel, and as occasion arises they will come to you for the same.

You will read, of course, "a lot." A very successful artist friend of mine (not an architect) once told me he had always made a rule of reading not less than five hours a day, and he was a very busy man. Few of you can do that, perhaps; but start with a high ideal and map out a certain time every day for the purpose.

You will have already read your text-books, your Fergusson, your Middleton, your Viollet-le-Duc, and so on, and now you will read more of the romance of architecture, the story of the building of St. Sophia, of the Duomo at Florence, of St. Peter's at Rome, and St. Paul's in London; the lives of great architects, painters, and sculptors of all generations and countries; how they looked at their art and the principles that guided them in the execution of their work; you will read your Ruskin, and in fact all the literature in connection with your art that you can lay your hands on (and there is no difficulty in that respect nowadays), for remember that your clients will expect you to know a great deal more about art in general and your own in particular than they do, and you must not let it be said of you, as a late Bishop of London said of a certain architect, "that he had sat next to him at dinner and was astonished to find that he (the Bishop) knew more about the Parthenon than the architect did himself!"

Then, of course, you will sketch existing buildings, new as well as old, and try to get at the principles of their design and construction. In my day we used to sketch and measure an arcade, a doorway, a font, or other detail easily accessible, draw it out prettily, and publish it in the *Architectural Association Sketch-Book*, and, I am afraid, remain oblivious of the points in the plan, elevation, and section of the building which produced the result we admired but did not understand. You will, I do not doubt, make a rough note of the plan, elevation, and section of the building you are studying, and put on the leading dimensions, noting the thickness of the walls, the amount of lighting area, &c., and any distinguishing features this analysis brings out.

Thus you will learn the real vertebra of the building, although you will probably have no notes fit for publication; but you will know your building in its three dimensions; and you will be surprised, if you continue this plan, how it will give you a grasp of the general conception of buildings, which is what an architect should endeavour to arrive at. The detail is important—vitally important—but the conception is the principal thing; and as you come to design buildings yourself you will think of them in the same way as cubes, not as planes, and, having learnt what feet look like in existing buildings, you will at once understand what they will look like in your own buildings when they come to be realised from paper structures to real brick and stone.

The great buildings of the world are admired because their dimensions are noble and proportionate the one to the other. You will, therefore, never rest till you have obtained this rhythmical music of dimension.

Then you will not think Construction beneath your notice. It is at the root of all great architecture. Wren was a great constructor, the founder of the Royal Society, an inventor of scientific instruments, and a scientific man. Go into St. Paul's and stand under the dome and think; go up into the spire of Salisbury Cathedral and think a little, and realise how greatly daring were the men who designed and erected these structures so that they have withstood the thrusts, the storms and natural decay of centuries, and remain the admiration of mankind.

Then you will also study materials—those that look well in work from colour and texture, and that weather well and improve by time. It is impossible, again, to exaggerate the importance of this towards a satisfactory building.

You will also (if you are wise) keep a commonplace book and jot down dimensions of things as they come under your notice, because it will save you much time and trouble later, when your hands are full and your time can be better employed than in hunting these matters up.

And with regard to the drawings you send out to the works, you will remember that *what* you show is far more important than *how* you show it; and so you will make your drawings as practical as possible, and write all instructions on them the workmen are likely to require; and you will be comparatively unconcerned as to how your building looks on paper, provided you can see in your mind's eye it will look well in reality. An architect's work is his building, let him produce it how he may. The beautiful drawings of the late J. F. Bentley, shown here a short time ago, had never been seen before, his one desire being —so Mr. Ingress Bell, who knew him well, tells me—that he should be known by his work and nothing else.

I have not, even now, enumerated half the branches of study in which you will have to instruct yourself, but, lest you should feel it an impossible task, I may say that you will find, as you master first one and then another, these subjects will dovetail one into another so that you will gradually, perhaps almost unawares, become a well-informed man.

Then you will travel, of course, when the opportunity occurs. The caution given in this room by Sir Laurence Alma-Tadema a short time ago did not apply, you will see, to foreign travel generally, but to travel undertaken too early in your career and before you know your own country.

And then, in addition to all this, you will practise scrupulous integrity towards your employer, employed, and professional brethren, and you will never do anything you would prefer your client not to know about (for that is a safe rule when you are in doubt). You will, I am sure, endeavour to be courteous, upright, and modest in all your work, not always seeking your own advantage, and so you will raise yourself and your calling and become what we call an English gentleman.

You will not, if you are wise, be content to let your art stay where you found it, but you will go on and on and carry it, as far as in you lies, a step further; you will become a "true lover of the past who does not scorn to take good heed to what the future saith," and so you will not work in vain.

It is easier, I know—no one better—to say all this than to do it. Nothing worth doing was ever yet easily done; lifelong work is required, and I end, as I began: you will do no good thing without it, and get no enjoyment either without it. The possibilities of life are nearly endless, and they depend mainly on yourselves.

Remember that the pursuit of architecture is a serious pursuit. Some buildings seem as if put up for mere fun; you will not treat your art so, I am sure. Play and fancy in the detail there may be, but the main structure must be sober, with an evident idea to impress or to attract.

Ruskin tells us "it is sympathy and imagination that make the artist." Cultivate, therefore, both, and you may leave behind you something that has been worth the doing. And doing is the principal thing—don't think over much, but try.

REVIEW OF THE DESIGNS AND DRAWINGS SUBMITTED FOR THE PRIZES AND STUDENTSHIPS 1903.

By Walter Millard [*A.*], *Pugin Student* 1879.

IN compliance with a request from the President, which I take as a command, I will endeavour to give, in the form of a short criticism, some of my impressions on making an examination of the Designs and Drawings submitted this year for our Prizes and Studentships. Whilst deeply sensible of the honour of being invited to follow those who in former years have discharged this most responsible duty, and keenly conscious of the extreme delicacy, to say nothing of the difficulty of the task, I will nevertheless waste no vain words on misgivings concerning my own fitness for it, but will proceed forthwith to the expression of thoughts provoked by the exhibition we have been holding. I may say that my opinions on this were formed independently of the prize awards, and indeed, I think, before any awards had been made.

Following the printed Syllabus of Prizes and Studentships, we find the Essay Medal put first. The subject set for it, viz. "A Comparative Review of the various Past and Present Systems of Architectural Training at Home and Abroad," has a very special—we might almost say a vital—interest for us, now in particular; and one can only hope it may have attracted competitors qualified to treat it adequately in spite of the rather vast comprehensiveness of the title. I have not had the opportunity of reading the Essays; but I would point out that any review of the subject could scarcely fail to note the far-reaching fact that as a corporate body "for the general advancement of Civil Architecture and for promoting and facilitating the acquirement of the knowledge of the various arts and sciences connected therewith," this Institute bears no direct or active part in the work of teaching and training recruits to our profession; but leaves them, in this respect, to the ministrations and mercies of anybody who undertakes "to teach and instruct, to the utmost of his skill and knowledge, in the art and profession of an architect—in consideration of, &c., &c." Rightly or wrongly, the Institute does not train; it provides the course, the hurdles, and the water-jumps. In the exhibition just held we have had brought up before the Institute, for trial and judgment, some results of architectural training obtained elsewhere—and anywhere, training for which the Institute as a body assumes no responsibility; acting rather, so to speak, as a fountain of honour.

THE MEASURED DRAWINGS.

For the Measured Drawings Medal three sets only are submitted, none of them illustrating a subject earlier in date than the seventeenth century. Considering the immense value, in more respects than one, of the faithful delineation of still-existing examples of our old architecture, of all dates, might it not be worth while to increase the sum of money now awarded with this Medal from ten guineas to something more nearly approximating to the bare value of the labour and draughtsmanship required to portray worthily a good subject—as in the case of most well-conducted competitions nowadays? The author of the drawings of Craigievar Castle, Aberdeenshire, neatly lays open for us, by his plans and sections, the inside of a delightful-looking residence. In rather painful contrast with his geometrical drawings are his pen-and-ink perspective views, of a subject that deserved drawing, marred by peculiarities of penmanship which he should hasten to unlearn.

What a lesson to us all in the quality of restraint from architectural excess do these Scotch castles afford! How well they seem to do without much detail externally, and how happily the detail that is used is concentrated exactly where it means most and tells best in the composition as a whole; whilst internally how home-like and cosy everything seems, with thick enclosing walls and a good blanket of rough-cast on the weather face! The two other competitors illustrate respectively Ball's Park, Hertford—a square, brick-built house of about A.D. 1641, apparently much modernised inside—and the church of St. Martin-in-the-Fields, London—its tower excepted, a rather large omission. Neither set strikes one as a convincingly faithful rendering of its subject; and of what use is an unfaithful rendering? I would ask. The author of the former, whilst ruling innumerable lines to denote brickwork, ignores all jointing in what appears to be masonry, without telling us if it be only stucco; the author of the latter, in his full-size mouldings, fails to indicate a single bed-joint wherever he happens to cross one in section—a point in masonry not altogether negligible. His longitudinal elevation and section of the church in one or two small points do not agree to tell quite the same story; a minor matter, perhaps, but significant.

DESIGNS FOR A TOWN CHURCH.

The subject for the Soane Medallion being a "Design for a Town Church" on a corner site of 140 feet by 90 feet, the attention of competitors was called to the remarks on Church Planning in Sir William Emerson's Presidential Address of 1901. This, alas! seems to have proved indeed what Burges would have described as "strong meat for babes"; at any rate, about one-third of the twenty-one competitors, several of the ablest among them, appear to have considered themselves thereby licensed to arrange for the choir of a modern church—presumably a parish church, whose choir would hardly consist of individuals "in orders"—to sing away by themselves up at the extreme east end of the building, having in most cases interposed between them and the congregation the altar, backed in one instance by a high reredos, and surmounted in others by a big, four-legged baldachino. But, waiving discussion of this question, let us view the designs themselves.

There is still scope for "Advance!" to act up to his motto. He has allowed himself to be dominated by the idea of an elongated octagon for his plan, rather than by the real conditions of the problem of designing a church for that particular site. In like manner "Bee" goes astray, on different lines. He must needs, at all costs, pile up a soaring central tower and spire, borne aloft over the middle of his church on four thick legs—perhaps the least convenient plan of all others for a town church. After indulging to such an extent as he does in such very "Gothic" detail, he ought now to pledge himself to abstain from detail for awhile. "Como," taking a wider base, also goes in for a good central pile-up, resulting in a terribly tall interior. I only fear it would not result in a good church for working purposes, if that be of any consequence. "E Natura Architectura" means at least to be practical, with his "concert-room" floor falling eastwards, his steel-framed roofs, and extract ventilation tubes. At first sight the general lay-out looks right; yet, after all, his interior would prove gloomy, even if neighbours did not block his northern lights. "Fides" produces a church plan without indicating any site; so it is difficult to say how it would do. The design by "Fioretto" shows some largeness of idea, and is, altogether, cleverly devised; but his building is crowned by a needlessly ungainly dome, all out of scale, both internally and externally, with the rest of the architecture, which is too good to be so handicapped. The painting he proposes might doubtless do something to help matters internally. The sort of work shown by "Ich Dien" is hardly deserving of encouragement, the more so as it looks like the result of bravado rather than of incompetence. The freehand drawing in his perspective view amounts to little less than an affront to the beholder. "ΙΧΘΥΣ" has done an exercise in Byzantine planning and detail, showing in a good set of drawings much careful contrivance, no slight knowledge, and general architectural ability that commands respect. Whether it would add to our happiness to see it all built to-day is another question. "Lauda Finem" strikes one as a man who knows his own mind and has the power of giving effectual expression to his ideas. We may question a few points in his plan, but must allow that he handles his architecture like an architect. He can draw, too, his perspective view surviving even the uncomfortable-looking background of furnace vapour on which it is relieved. "Medici" is one of several who waste precious site-area in attempting, more or less ineffectually, to make some pet idea work; so, the real problem of designing for that site and that alone, is evaded, not solved. "Neni" covers his main area by a barrel-vault so wide in span and so short in the other direction that he might have made a dome of it at once. "Ne oubliez" plants a fairly good tower in the wrong position, on the external angle of the site, thus swamping his church. He is too bold with his tower and too modest with his church. "New Era" shows a well-made effort to put into good form, in his own way, on this particular site lessons learnt—in the best sense—from Bentley's Westminster Cathedral; learnt from a building rather than from books, the way good work ever was done. The plan skilfully utilises every inch of the site, and, but for the debatable position of the choir, would work admirably, whilst producing a striking and even impressive interior in spite of the unavoidable shortness of the whole building. Externally the author has had the happy audacity—and he is the only competitor who has—to treat us to a pair of towers: a pretty sure way of obtaining a telling effect in a building mass and of stamping it with distinction. This almost sets one wishing—though it may be heresy to say so—that such an idea might have been carried out in the case of the Westminster Cathedral itself. With two towers you get twice the emphasis, and something more. The play of light alone, from one to the other, is a charm to count on. The design by "ΦΟΙΝΙΞ" fits the site, but fails as architecture. "Perseverando" produces a working plan, filling the site and resulting in an interior that would have some scale and mystery about it. He hampers himself by the fancied necessity of raising a central tower and of supporting this by transepts, which tell as such only externally, with any effect. He has something to unlearn in the use of detail, as well as in manner of drawing. "Rodari" too obviously attempts to squeeze a big circular church on to a plot of building-land not selected for it. The exact purpose of his tower is not clear, seeing that there are no belfry openings, to speak of. "Sanctus" might well have tried twin towers with advantage in his design, and at the same time, perhaps, have better escaped recalling quite so vividly a lately published design. One is checked in smiling at "Xerxes" and his legions of columns by his evident seriousness. "X *a*" and "X *b*" base themselves somewhat closely on Pearson and Sedding respectively, and afford an interesting parallel of stone-vaulted churches. The main disposition of "X *a*'s" building is on right lines for appropriate and dignified effect, though no tower appears, worth mentioning as such. His massing of parts is good, but the repetition of text-book tracery and other detail would be wearisome in execution. He and also "Medici," perhaps with some prophetic insight, put their choir and organ at the west end. "X *b*'s" is, on the whole, a consistent and well threshed-out design, with just a tendency to fussiness in detail in too many places at once. A little might be left out with advantage. His east front would have risen still more majestically above a quieter treatment of the low building at its base. The tower, planted exactly in the right position for it, is quite a noble feature—a good tower for a town church.

Lastly, "Patriarchal Cross" plans a church for the site, and tries to solve the old problem of how to reconcile and make the best of both aspects of a cupola, the interior and the exterior.

DESIGNS FOR A PAVILION IN A PUBLIC GARDEN.

For the Tite Prize this time it may be said that the authorities did "a stately pleasure-dome decree," setting as the subject "A Pavilion in a Public Garden." Competitors might go as they pleased with regard to conditions of site and surroundings, certain accommodation only being asked for; but the designs must be in accordance with the stipulation that the trust fund be applied "in such manner as the President and Council shall deem best calculated to promote the study in England of Italian architecture," as that slightly ambiguous term was understood by Sir William Tite. So, altogether, there is rather less air of stern reality about the fourteen designs for this competition than about those for the Soane.

"Altiora," "Archivolt," and "Ariel" play with architectural forms more or less prettily, but not to exceptionally good purpose, though "Archivolt" has some good points in a disproportioned whole. "Caber Feidh" has designed a building that holds together consistently and has marked character. Why he should think it necessary to put a row of glazed windows in his frieze above a range of open arches is a mystery, his section showing how futile they would be for lighting purposes and how needless. "Forum" has composed a group too fussy to be fine architecture. "Le Nord" produces a straightforward piece of architecture, soberly and sensibly designed. "Lindisfarne" secures apparent unity in his design, which, however, will not bear close scrutiny. "Lux" has had a big cupola to work off—not a bad one, by the way, to look at; but, would it stand, especially on the ground-floor supports shown? Otherwise his architecture is well handled. "Mime" and "Mulciber" have done exercises in the grouping of architectural forms radiating on plan from a central cupola. "Pax" denies himself a perspective view, so that full justice is scarcely done to the merits of his thoughtfully laid-out piece of architecture. In the same way, of course, some of its weaknesses too may escape disclosure. The design by "Phœnix" is unassuming, and so far welcome; whilst that by "Queen of Hearts" comprises too many different ideas to be quite happily combined and to hang well together as one thing. "St. Winifred's" design would not make good architecture, if it could get built as shown.

THE STUDY OF CONSTRUCTION.

The Grissell Prize, "for the encouragement of the study of Construction," attracts eleven competitors, most of whom seem to consider that the solution of a constructional problem cannot be complete without involving an exercise also in the art of manipulating purely architectural features and detail. Can it be that the display of this latter accomplishment is thrown in as a make-weight?

In working out the "Design for a Stone Dome over a *Porte-cochère* to a large Public Hall," "Blunderbuss" indulges in some sculpture as well as architecture, after attempting a version of Wren's cupola construction at St. Paul's, all in stone, without getting sufficient room between the inner and outer shells to enable the cone really to carry the lantern. "Red Rose" is far less ambitious of showing any ingenious system of construction, whilst giving us architecture so charming that I think Wren himself might have put his name to it and not been found out. "Duomo" conceives a simple dome, and then proceeds to hide it all up externally by architecture, of the Ionic order. In addition he provides and sets a statue, on plan. "Golden Horn" draws a bare outline section of a dome with no visible means of construction about it—not a joint; which is the more remarkable because his architecture below it is depicted more or less as it might be built. He is careful to specify the arrangement of the electric lighting. "H.I.M." is one of two competitors who venture to complicate the constructional problem by introducing daylight into their dome, above the springing. His architecture itself hardly justifies its intrusion into the question. "Notts" sticks closer to the problem of constructing a dome, and determines that it shall carry a stone lantern on the crown. To make doubly sure as to this he thoughtfully provides and shows, outside, at the springing, a "tested steel cable, coated with Dr. Angus Smith's solution, and afterwards well tarred." "Quercus" also carries a stone lantern, and at the same time pierces his dome for light. He makes some show of architecture. "Civic" goes into the constructional question with calculated diagram of stresses, line of pressure, and specification of mortar. "Wrot iron ties," as he calls them, help to ensure that his stone lantern at the crown shall remain *in situ*. "Sepia" tackles the rather awkward problem of draughtsmanship, if not of construction, involved in the crossing and impenetration of arches to form pendentives, such as we see in illustrations of certain domes in India. His dome proper, raised above these arches on a pierced drum, forms another problem, over the solution of which he expends far less effort. "White Rose" has a double-shell dome carried by architecture of no mean order, ably delineated. Finally, "Z" would have timid visitors received, on alighting from their carriages, by four semi-draped human figures, in stone, of colossal size, standing up in the gloom of the four inner angles of the porch, performing the office of pendentives by carrying on their bowed necks and shoulders the circular cornice, from which a simple dome springs.

ARCHITECTURAL ORNAMENT AND COLOURED DECORATION.

Three men compete for the Owen Jones Studentship, "founded for the encouragement of the study of Architecture, more particularly in respect to Ornament and Coloured Decoration." Mr. Guthrie shows useful studies from St. Mark's, Venice, St. Vitale, Ravenna, Granada, and elsewhere. His original design, for the decoration of a domed chamber, suffers in the first place from too many sources of inspiration. It lacks unity, among other qualities to be desired. Mr. McLachlan, in a slight but illuminating sketch to scale, lays open to us, from end to end, that wonderful interior of the Capella Palatina, Palermo. It sets us asking for more. The mosque at Cordova and St. Anastasia, Verona, afford him subjects for other clever drawings; whilst it is satisfactory to find our own country also represented by examples from Canterbury and Ranworth, in Norfolk, and by the ceilings of that great Suffolk church of Blythburgh. Mr. McLachlan does not venture on a design of his own. Mr. Percy Nobbs relies mainly on one, viz. "a scheme for the mosaic decoration for a church of the form and scale of Sta. Fosca, Torcello," a most appropriate subject to choose. It is easy to imagine that his scheme might be made to work out even more successfully and impressively than his slightly inadequate representations of it would warrant one in supposing. His treatment of broad belts of gold-ground mosaic below the blue-ground mosaic of the main vaulting surfaces seems a happy combination. Evidently he knows what mosaic decoration is, and has found how difficult it is to illustrate by small-scale sketches.

DRAWINGS FOR THE PUGIN STUDENTSHIP.

The Pugin Studentship, "for the promotion of the study of the *Mediæval Architecture of Great Britain and Ireland*," is awarded, on conditions, to the author of the best selection of drawings and testimonials. Mr. Harold Gibbons goes the right way to work in his survey of

Cheetham's Hospital, Manchester, which, as regards a good portion of the place, he takes up as a whole and dissects for us, showing its anatomy and its build, all illustrated intelligibly, if not exhaustively. Likewise he lays hold of the interesting, stone-roofed church porch, of two stories, at Leverington, Cambs., making a fairly complete study of it as a self-contained piece of architecture. His quarter-full-size pencil drawing of the Heckington Sedilia, finished, as he tells us, on the spot, is a thoroughly good drawing, so far as it goes without a section, of a subject worth drawing. Mr. Gordon's sketches and drawings have about them rather too much the air of having been made for show, in the first place, and secondly for the purpose of study of the work itself. Nor are they conspicuously good even for the former purpose. Mr. Hamp pursues his out-door studies in architecture as so many of us have been guilty of doing, viz. by making a great variety of little perspective views of buildings—and bits of building. He should, at any rate, make better ones, to justify his procedure. Of this particular line of study Mr. Milne is also a devotee; though, like Mr. Hamp, he grants some concession to possible prejudice by submitting a scale drawing or two. Mr. Mears has much more to show on similar lines; but, besides some needlessly muddy sketches, he gives us, to quarter-inch scale, drawn rather slightly, the steeple of St. Mary's, Oxford, from bottom to top, as well as several interesting coloured drawings, to scale, of Norfolk screens. Mr. Muir's strainers are mostly filled by measured drawings; and, as drawings, very taking one or two of them are, touched up by skilful brushwork, with shadows deftly cast and high lights cunningly left, all at the draughtsman's own sweet will. Other drawings of his look more workmanlike. He might now go on, with advantage, to studying works of architecture rather more *in toto* and a little less in tit-bits. Mr. Myrtle Smith has a good, miscellaneous show of regulation sketches, with a sheet or two of measured work thrown in—for propriety's sake, perhaps. Mr. Westwood does give, besides many little pencillings, pretty and otherwise, a set of measured drawings of a whole church; not, indeed, one of first-class importance architecturally, but possibly with more of real interest in it than one might suspect from a glance at these neat-looking but not quite exhaustive drawings of his. For instance, he blacks in his plan throughout, as though the entire church, as it stands, were all the result of one building effort; which is improbable.

THE GODWIN BURSARY.

I have deemed it a matter of some importance to try and notice, however briefly, the work shown of every competitor for a Prize or Studentship. Of our winners of Studentships the holder of the Godwin Bursary is surely the one most to be envied by men of his own time: since he goes forth to study and report on the *Real Thing*, the work of to-day done by picked men. To think of our sending out one student only a year on such a mission! To be sure, the study of the work of to-day in our own country is barred to him by the conditions of the Bursary, for which any British subject is eligible.

To sum up, I cannot help wondering a little with what feelings would some of the pious founders of our Prizes and Studentships have viewed the Exhibition, and in what way would they have given expression to their feelings. Apart from questions of architectural style merely, would they have been content to observe a large proportion of the designers starting, with some preconceived idea and a stock of architectural trimmings to dispose of, to evolve designs, apparently without intelligently grasping anything like the full significance of the problem to be solved; going the wrong way to their work from the first, and often gratuitously creating difficulties for themselves, perhaps for the purpose of getting over them—but then failing to do this, as Mr. Hare suggested was the case last year also? Or would the founders have been any better pleased in looking at certain of the representations of old work, wherein some facts are distorted and others left doubtful, when they might be clearly told; evidence not only of slipshod ways of drawing old work, but, furthermore, of a superficial way of regarding it? I must offer just a single instance of this want of thoroughness, because it is typical. One competitor begins to illustrate full-size, in elevation and section, a moulded sash-bar; but, so far from going through with the thing, and telling us the depth of the bar by giving its complete section, he is satisfied to give the moulded edge only, without going even so deep as the plane of the glass itself which the bar is designed to hold! This is so characteristic of much of the draughtsmanship in vogue, professing to be workmanlike. What is an architect, or a student of architecture, if he be not really workmanlike in his methods of work and study? For the root of the evil I fear we must go further back than the individual students themselves. To a quite considerable extent these are yet untaught and untrained in right methods of study; how to learn they have never been taught.

In other callings the cry goes up for efficiency; is this any less needed in ours? But an architect of whom it could only be said that he was efficient would not thereby necessarily be entitled, in the fullest and highest sense, to recognition as an architect. For this he must add to his indispensable practical qualifications something that we try to describe by some such term as artistic ability, but for which term I would prefer to substitute another, viz. the appellation of that rather indefinable quality which, in parallel branches of human knowledge and human endeavour, is generally understood by the word Scholarship; a quality based on sound knowledge, yet compounded also with something more than mere knowledge; the crowning result of a process of training rightly applied to draw out and turn to best advantage those finer instincts with which the student may have been endowed by nature. If I might presume to suggest for the architectural student two watchwords, these would be *Scholarship* and *Efficiency*. Without the one he can be no true architect, without the other he will be a sorry architect indeed!

9, Conduit Street, London, W., *7th Feb.* 1903.

CHRONICLE.

The Prizes and Studentships 1903.

The Annual Exhibition of the works submitted in competition for the Prizes and Studentships in the gift of the Institute opened at the Gallery of the Alpine Club on Tuesday the 22nd ult., and closed on Saturday the 31st. The visitors' book showed nearly thirteen hundred signatures. The number of competitors was fewer than last year—sixty-nine, as against seventy-nine; number of strainers 355, as against 387 last year. The drawings done by the Travelling Students, Messrs. J. Hervey Rutherford, E. H. Bennett, C. Wontner Smith, and Walter Fairbairn, were hung in the Meeting-room on the occasion of the Presentation of Prizes on the 2nd inst.

The Addresses to Students.

Those who followed the President's Address as delivered at the Meeting and who now read it as printed on foregoing pages will perhaps miss some of the humorous touches which delighted the audience last Monday. It was delivered with only occasional reference to the draft prepared for the Journal purposes, and the President's allusions to his personal experiences as a young practitioner and other of his most telling points were interjected apparently as the speaker warmed to his subject. The following is a note of the remarks made on the motion for the vote of thanks:—

Mr. Solomon J. Solomon, A.R.A., said he had been extremely impressed with the practical wisdom of the President's delightful address to the students, and with the learned criticisms offered of their work; it showed the enormous interest that the professors took in the works of the students of architecture. They saw them that evening in more or less gala attire, but the students knew that sometimes they took off their coats to the work. He did not know that the professors expected the gratitude of the students for what had been done for them; for he held that no man was worth his salt who did not deem it his duty to hand on to those who were to follow in his footsteps some of the traditions he had received from his master, and even to add to them some of his own experiences. It had been hinted to him that he should say a few words about the relationship between the arts, and he was more or less prepared to do so, but not in an academic sense. The idea he had in his mind was one he might hesitate to speak about in an assembly of that kind, did he not consider that it was pregnant with great possibilities for the future of the art of this country. He referred more particularly to the decorative forms of art, which were so much neglected at the present day. He held a sort of brief for the students of painting of the future in saying these few words to the architectural students of the future, who had it in their power so much to show their—he could hardly say *brotherly* love, because architecture was the *mother* of the arts, and painting and sculpture were the *daughters*. It seemed to him, however, that the first duty of a mother was to find house room for her daughter, and, if possible, to foster her development. This country, he was afraid, did very little for certain forms of art. There were forms which flourished exceedingly, and others led but a torpid existence for want, very often, of nourishment, and certainly for the want of opportunity. The Church, for instance, no longer sought the co-operation of the painter. But a country with a history like ours, richer in great movements than the history of any other modern nation, ought to deem it a necessity to have her great past and her moving present recorded artistically on the walls of her public buildings. He need not point out, in such an assembly, how the architect could materially assist in bringing about such a desirable result. They no doubt would see, as they were practical men, many practical difficulties, and would imagine many others. It might be said—and he had heard it said *à propos* of this subject—that if men existed who could do work of that kind there would be necessarily a demand. But he maintained that that was bad economics; in art, as with commerce, the demand created the supply, and the opportunity would always find out the men. He had put forward this suggestion in the hope that the architects of the future might, as they would have the opportunity, impress upon the community generally the duty they owed to themselves and to the art of the country. He hoped they would excuse him if they thought he had trodden on delicate ground; but he seriously thought the subject was one that justified his talking about it, even as their guest. He understood that it was his pleasant duty to propose a vote of thanks to the President for his address. He had already referred to the practical wisdom in which it abounded. Above all men he knew that the President was one that took off his coat to the work when the interest of the students was in question. He worked hard at the Academy among the students there, and very hard work it was, too, at times: and in the conversations he frequently had with him, whatever topic they started with, they invariably ended up with the art student. They had seen that evening the enormous interest he took in the students; this, after all, was the interest which the president of any institution ought to take in his art, for the students were the men who would, they hoped, follow in his footsteps. He had much pleasure in proposing a hearty vote of thanks to the President for his delightful Address.

Mr. John Belcher, A.R.A., *Vice-President*, in seconding the vote of thanks, said that the Address had been most interesting. It was addressed to students generally, and to the younger students in particular, but it was addressed to them all, for they were all students, and could take to heart the many valuable hints and excellent suggestions given by the President. Mr. Millard had also criticised the students' drawings very ably, and carefully, and minutely; they had been much interested in his remarks, and no doubt the students would value what hehad said. As one of those who had examined the drawings, he might say that they had given him great pleasure—there was a great deal of excellent work among them—a great deal which showed a decided advance on past times, and they might congratulate themselves on the very excellent exhibition they had enjoyed. Perhaps the weakest part of the work was the sketches. Both the President and Mr. Millard had alluded to the importance and value of sketching, and he agreed with Mr. Millard that they should endeavour, as far as possible, to examine and sketch buildings *in toto*, as he said, instead of "in tit-bits." As the President remarked, in times past they had sketched doors and windows and little bits of buildings, but had probably neglected the more important matter, the consideration of the whole building. He felt very strongly that it was important that they should study the work as a whole. In sketching it was wise to sketch the whole building; by that means they got an insight into the rhythm that the President had spoken of, and the harmony of the parts, the value of proportion, and the value of any pretty bits that they might sketch separately afterwards. They might look at any one part and note it, but they would only learn its relative value when they had studied its position in the whole building—its position very often as a piece of ornament in a large field of plain surface. If they would understand the importance and the value of the one to the other, they must be careful in selecting their tit-bit to note its harmony with its surroundings.

The President, responding, thanked the Meeting for their kind reception of his Address. The giving of such an Address, he said, was a responsible and difficult thing to do, but it was one that he had taken the greatest possible interest in. They were all interested in what Mr. Solomon had said. Perhaps architects did not give the painter a "look in" quite as often as they ought to do and might do. He had heard it said by painters that architects now pilastered their walls and panelled them so that there was no room left for a picture of any kind. Mr. Solomon was one who not only painted easel pictures, but "could cover a palace front with colour in a single day" if desired, and there were not very many painters at the present day who painted on that scale. They were all much obliged to Mr. Millard for his careful and exhaustive criticisms.

The American Institute of Architects.

The nomination by the Council of Mr. Charles F. McKim, President of the American Institute of Architects, as the recipient of the Royal Gold Medal for the year has most happily coincided with the receipt of the following letter:—

The American Institute of Architects, The Octagon,
Washington, D.C., 17th January 1903.

Dear Sir,—At a meeting of the Board of Directors of the American Institute of Architects held in Washington, 10th December 1902, the Board passed a resolution that any members of the Royal Institute of British Architects who had taken the examination in that Institute were eligible for entrance into the American Institute of Architects without taking an examination for admission to our Society.—Yours very truly,

Glenn Brown,
Secretary A.I.A.

The Secretary R.I.B.A.

The Council have conveyed to the American Institute their acknowledgment of this graceful act of courtesy.

Competitions: New Technical School, Blackpool.

The Council have had before them the conditions of this competition, which include the following clauses:

XXII. The Council offer premiums of £60 to the author of the design placed first, and £25 to the author of the design placed second, and £15 to the author of the design placed third, but no premium will be paid if in the opinion of the Council no design be worthy thereof.

XXIII. The premiated designs and the reports shall become the sole property of the Council. The Council shall have the right, if they wish, to carry out the selected design entirely or in part or to employ the successful competitor or not as they think fit.

XXIV. The Council do not undertake to carry out the premiated or any other design, and no allowance for such designs beyond the premiums (if awarded) will be made.

XXV. The Council shall be at liberty to employ any competitor to carry out his design, but in the event of his being so employed the premium will merge into his commission. The commission to include the cost of all sketches for approval and full and complete specifications, sections, working and detail drawings, architect's estimates and superintendence, carrying out the works as architect, and attendance on the Council and any Committee or officials. The commission would be £5 per cent. upon the cost of all buildings, heating apparatus, boundary walls, fences, levelling and draining, and all expenses, but upon a total sum not exceeding £15,000.

XXVII. The design selected will have to be submitted to the Council, and if any alterations are necessary the author shall make such alterations at his own cost, and the premium shall not be payable unless such plans are approved by the Corporation.

XXVIII. The Council will retain an Assessor to advise upon the designs and reserve the right, after consideration of his report, of deciding which design shall be accepted, or of rejecting the whole.

XXIX. Each set of drawings sent in (carriage paid) must be marked by an anonymous motto or number accompanied by a sealed envelope also marked with the same motto or number containing the author's name and address.

The Council have addressed a communication to the promoters.

Some Drawings by George Maddox.

The illustrations with this number are reproduced from a small album of drawings and sketches in the Institute Library, the work of George Maddox [*b.* 1760; *d.* 1843], an architect of high repute as a draughtsman among the architects of a century ago, and of some note outside the profession for his paintings of architectural subjects hung at the exhibitions of the Society of British Artists. The drawings here presented are the only completed studies in the collection; the others, which scarcely warrant reproduction, are unfinished compositions in pen and ink, and various sketches and studies in pencil. The sketch given as a tailpiece to p. 199 is part of an idea for a fountain, a few other details of which are among the pen-and-ink drawings. The following letters enclosed in the album, recalling some of the best-known names in the records of the Institute, tell what is known of the drawings :—

37, *Gloucester Gardens, W.*, 3*rd March* 1869.

DEAR SIR,—I have now the pleasure to send for presentation to the Royal Institute of British Architects the book referred to in my former letter, and yours of the 19th ult., containing drawings and sketches made for me by the late George Maddox, *circa* 1819–20. I think they will be considered interesting as the productions of a talented draughtsman and enthusiastic lover of Art.—Yours faithfully,

Wyatt Papworth, Esq. DECIMUS BURTON.

19*th March* 1869.

MY DEAR SEDDON,—I am prevented from being at the Institute to-night to present personally the accompanying sketch-book from Mr. Decimus Burton, which he has kindly entrusted to my care for the purpose.

The sketches are wonderful specimens of handwork, and show great originality of design. The artist, Mr. George Maddox, died about 1843.—Believe me, yours faithfully,

J. P. Seddon, Esq., Hon. Sec. WYATT PAPWORTH.

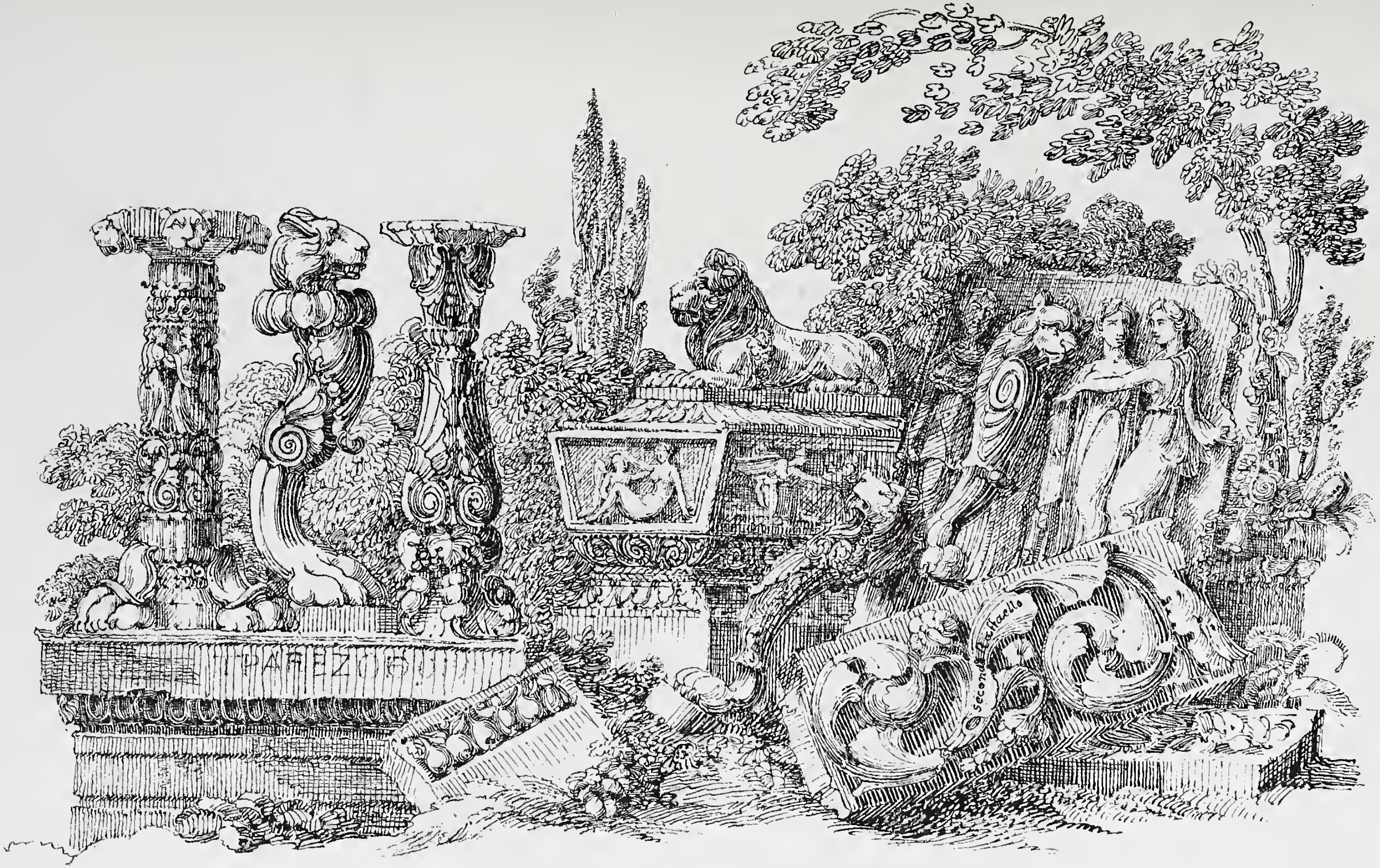
The reproductions are the full size of the originals. But the drawings themselves should be looked at: reproduction cannot do them justice. Not a little remarkable, considering the extreme fineness and delicacy of touch which distinguish them, is the fact that the artist when he made them had passed his sixtieth year.

George Maddox was the son of a builder of Monmouth. Having served as apprentice to his father he came to London and entered the office of John (afterwards Sir John) Soane. He subsequently had to do with the building of the Pantheon in Oxford Street, an unfortunate connection which involved him in pecuniary difficulties. About 1790 he was commissioned by the Duke of Cumberland, George III.'s brother, to build an opera house in Leicester Square. His design, which included a portico carried by columns sixty feet high, was approved, and all but the final preliminaries to building arranged, when his patron died, and the project was abandoned. About 1820 he was engaged under B. Wyatt to conduct the works at Clarence House, then building for Frederick, Duke of York. He also carried out the building of Strensham Court, near Pershore, Worcestershire. He designed various private buildings and shops in the Strand, Conduit Street, Southampton Street, Tavistock Place, Bloomsbury—all of them original and pleasing compositions of an Anglo-Greek type. In later life his architectural practice fell away altogether, and for many years before his death he maintained himself by teaching drawing and occasionally making designs and drawings for architects. His system of drawing volutes is described and illustrated in the *Civil Engineer*, 6th January 1844. Decimus Burton was a pupil in his drawing school.

Maddox died at the age of eighty-three. An obituary notice in the *Civil Engineer* for 1844 credits him with being an artist in the most comprehensive sense of the word—to a degree, perhaps, that was prejudicial to his immediate interests, since he was too much wrapt up in art to concern himself about his own worldly advancement.

The Wellington Monument at St. Paul's.

At the Meeting last Monday, before coming to the main business of the evening, the President referred to the proposals for completing the Wellington Monument at St. Paul's Cathedral. It was a matter, he said, that few people were more interested in than architects. The monument had a quality that was specially appreciated by them. The Council, he went on to say, had had the matter under consideration at their meeting that afternoon, and he had been requested on their behalf to express a hope that if, as they understood, the equestrian model of the Duke by Stevens was in such a condition that it could be placed on the monument for examination and consideration before anything further was done,



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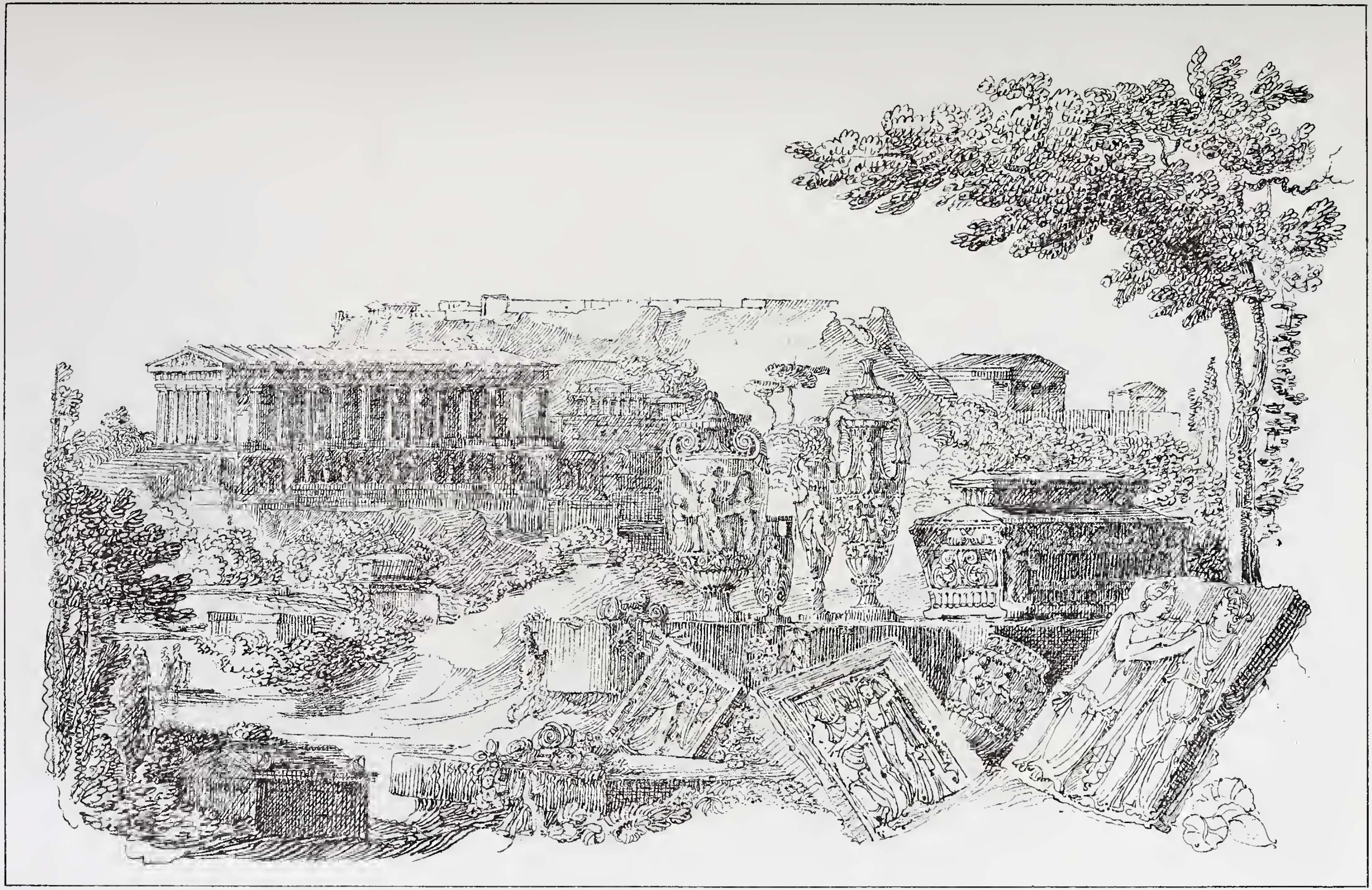
FROM A DRAWING IN THE INSTITUTE COLLECTION BY GEORGE MADDOX, *c.* 1819–20.



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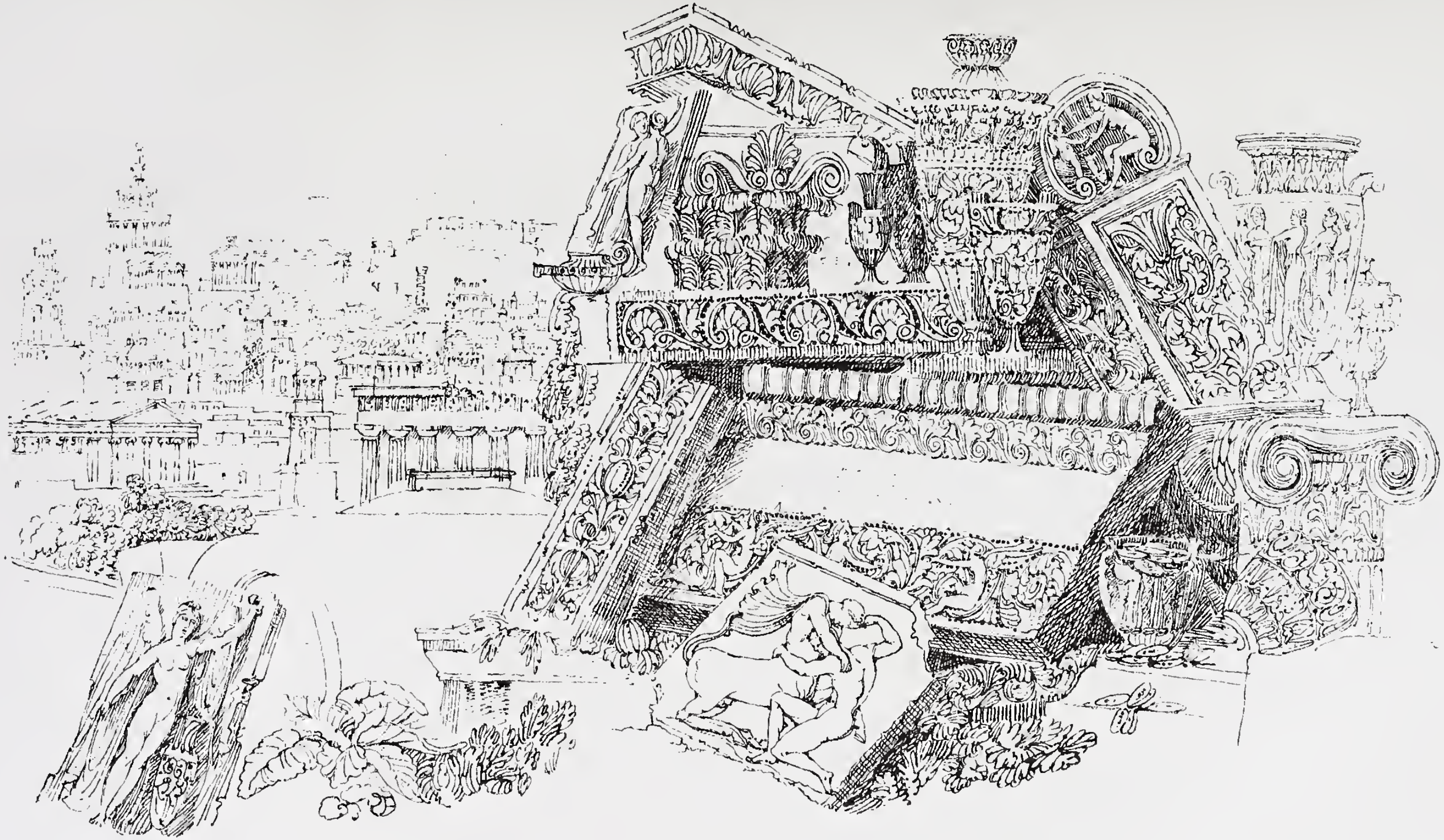
FROM A DRAWING IN THE INSTITUTE COLLECTION BY GEORGE MADDOX, *c.* 1819—20.



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FROM A DRAWING IN THE INSTITUTE COLLECTION BY GEORGE MADDOX, *c.* 1819—20.

March 12.—Professor T. Roger Smith [*F.*] on "Canterbury Cathedral" (Chairman: Rev. W. Page Roberts, Canon of Canterbury).

March 19.—Maurice Fitzmaurice, C.M.G., M.Inst.C.E., on "The Assouan Dam and Egyptian Irrigation."

The Lectures are held at Carpenters' Hall, London Wall, at 8 p.m. on the above dates. Admission is free by ticket. Members may obtain tickets at the Institute.

MINUTES. VII.

At the Seventh General Meeting (Ordinary) of the Session 1902–3, held Monday, 2nd February 1903, at 8 p.m., the President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair, with 32 Fellows (including 17 members of the Council), 38 Associates (including 2 members of the Council), 2 Hon. Associates, and visitors, the Minutes of the Meeting held 19th January 1903 [p. 188] were taken as read and signed as correct.

The following Associates attending for the first time since their election were formally admitted by the President and signed the register:—viz. Cyril Wontner Smith, Louis Edward Pryke, Arthur Halcrow Verstage, Henry L. E. Merille de Colleville, John Harold Gibbons, William James Nash, and Horace Moger.

The President announced that the Council proposed to submit to His Majesty the King the name of Mr. Charles F. McKim, architect, of New York, as a fit recipient of the Royal Gold Medal for the current year.

The President made a communication with reference to the proposed completion of Alfred Stevens's monument to the Duke of Wellington in St. Paul's Cathedral.

The President having delivered the Annual Address to Students, Mr. Walter Millard [*A.*] read a Criticism of the Designs and Drawings submitted for the Prizes and Studentships: whereupon, on the motion of Mr. Solomon J. Solomon, A.R.A., seconded by Mr. John Belcher, A.R.A., Vice-President, a vote of thanks was passed by acclamation to the authors of the Addresses.

The presentation of prizes was then made by the President, and the various students introduced, as follows:—

Essay Prize.
Certificate of Hon. Mention to Mr. A. T. Griffith.

Measured Drawings Medal.
Silver Medal and £10 10*s.* to Mr. Andrew Rollo.

Soane Medallion.
The Medallion to Mr. E. F. Reynolds.
Medal of Merit to Mr. F. C. Mears.
Medal of Merit to Mr. C. Wontner Smith.

Owen Jones Studentship.
Mr. Percy E. Nobbs introduced as the *Owen Jones Student.*
Medal of Merit and £10 10*s.* to Mr. L. Rome Guthrie.

Pugin Studentship.
Mr. J. Harold Gibbons introduced as the *Pugin Student.*
Medal of Merit and £10 10*s.* to Mr. A. Muir.

Godwin Bursary.
Mr. A. Dunbar Smith introduced as the *Godwin Bursar.*

Tite Prize.
Certificate to Mr. David Smith.

Cates Prize.
£40 to Mr. A. Halcrow Verstage.

Grissell Gold Medal.
Gold Medal and £10 10*s.* to Mr. J. B. Fulton.

Ashpitel Prize.
Books of the value of £10 to Mr. Wm. Greenwood.

Owen Jones Studentship 1901.
Certificate and £50 to Mr. J. Hervey Rutherford.

Owen Jones Studentship 1902.
Certificate to Mr. Edward H. Bennett.

Godwin Bursary 1902.
Medal to Mr. C. A. Daubney.

Pugin Studentship 1902.
Medal and £40 to Mr. C. Wontner Smith.

The following candidates for membership, found by the Council to be eligible and qualified for membership according to the Charter and By-laws, were recommended for election, viz.:—As FELLOWS, Wilfrid Ainslie; Sir Robert Rowand Anderson, LL.D., F.R.S.E. (Edinburgh); Thomas Edwin Cooper; Herbert Davis; James Macintyre Henry (Edinburgh); Walter Stirrup (Blackburn); William Angelo Waddington [*A.*] (Manchester); John Henry Townsend Woodd, M.A.Cantab.; Arthur William Yeomans (Somerset). As ASSOCIATES. Robert Bennett (*Probationer* 1898, *Student* 1900, *Qualified* 1902) (Buxton); William Edward Brooks (*Probationer* 1900, *Student* 1901, *Qualified* 1902); Frederick Billinghurst Chester (*Probationer* 1892, *Student* 1898, *Qualified* 1902); Walter St. Leger Crowley (*Probationer* 1896, *Student* 1899, *Qualified* 1902) (Cardiff); William Greenwood, *Ashpitel Prizeman* 1902 (*Probationer* 1900, *Student* 1901, *Qualified* 1902) (Blackburn); John Hindle Higson (*Probationer* 1895, *Student* 1898, *Qualified* 1902) (Blackburn); Joseph Holt (*Probationer* 1893, *Student* 1898, *Qualified* 1902) (Wilmslow, Cheshire); Charles Henry Hopson (*Colonial Examination, Montreal,* 1902) (Sydney, Cape Breton, Canada); Henry Joseph Bissaker Hoskins (*Probationer* 1898, *Student* 1900, *Qualified* 1902) (Birmingham); John Ivor Price Jones (*Probationer* 1895, *Student* 1898, *Qualified* 1902) (Cardiff); James Morton Lethbridge (*Probationer* 1898, *Student* 1900, *Qualified* 1902); Thomas Forbes Maclennan (*Special Examination* 1902) (Edinburgh); Thomas McLaren (*Colonial Examination, Montreal,* 1902) (Montreal); Charles Ernest Monro (*Probationer* 1891, *Student* 1899, *Qualified* 1902) (Glasgow); George Salway Nicol (*Probationer* 1895, *Student* 1897, *Qualified* 1902) (Birmingham); Charles Edmund Lancaster Parkinson (*Probationer* 1899, *Student* 1900, *Qualified* 1902); Frank George Richardson (*Special Examination* 1901); Nathan Thomas Salmon (*Probationer* 1895, *Student* 1897, *Qualified* 1902) (Reading); Stanley Towse (*Probationer* 1893, *Student* 1899, *Qualified* 1902); William Henry Watkins (*Probationer* 1899, *Student* 1901, *Qualified* 1902) (Bristol); Horace White (*Probationer* 1896, *Student* 1898, *Qualified* 1902); Francis Carr Wrigley (*Probationer* 1897, *Student* 1899, *Qualified* 1902). As HON. CORRESPONDING MEMBER, Constant Moyaux, Member of the Institute of France, President of the Société centrale des Architectes Français, Paris.

The proceedings then closed, and the meeting separated at 10 p.m.

THE PLANNING OF COLLEGIATE BUILDINGS.

By Basil Champneys, B.A.

Read before the Royal Institute of British Architects, 16th February 1903.

A PAPER on a subject such as this should perhaps rightly commence with a definition of the term "Collegiate." Such a definition, which would at any time have proved somewhat difficult, tends to become more complex every year as the term expands to include recent developments. The etymology of the word will not help us much in our endeavour to limit its use. Its original meaning, that of a "gathering" or "association," is sufficiently wide to cover all, and more than all, the uses which could be touched on in an architectural treatise, especially as some senses in which the word "college" was used do not necessarily imply a local habitation, and consequently involve no architectural considerations whatever. Even fifty years ago, though the word was generally understood in a fairly definite sense, and in ordinary parlance implied the ancient foundations devoted to education at the great Universities, there were still current exceptional uses of the term. The Royal Colleges of Physicians and Surgeons, the College of Heralds, Sion College, &c., were in existence, and certain schools, the functions and characters of which were in no degree differentiated from those which enjoyed the ordinary appellation, bore the name of "Colleges." Nevertheless, such phrases as "going to College" at that time meant entering a College at Oxford or Cambridge with a view to taking a University degree, and, needless to say, it was of one sex only that it was used. The phrase has now become obsolete, probably because the term "College" has by the development of education acquired a far wider meaning. In the first place College education has ceased to be limited to men. Both at Oxford and Cambridge, and elsewhere, educational establishments for women have adopted the name of "Colleges." At Oxford at least two institutions have been founded, which, bearing the old name, differ from the old foundations in this essential respect, that they make no provision for the residence of students. Non-residential "Colleges" have been founded in many of the leading provincial towns: in short, the idea of residence is rapidly becoming detached from the term "college," which has come to have a far wider and more comprehensive sense than it formerly possessed.

For present purposes we may so far confine our use of the term as to first strike out all its senses which do not involve buildings; and, secondly, limit our discussion to such types of collegiate architecture as can be dealt with by me with the authority which practical experience may justify. In dealing with the subject of collegiate architecture thus limited, I do not propose to discuss at any considerable length its archæological aspect, but rather to dwell on the practical questions which are likely to present themselves to those who have to deal with collegiate buildings of the present day. It is, however, desirable to say so much with regard to the past as may serve to make clear the ideal which the builders of old set before them, and to show how changes of custom have served to modify the original standard, and to present the problems of the present day under different conditions from those of an earlier age.

Every one knows that at the time when the college buildings at the old Universities were erected the students entered on their University careers at a much earlier age than is customary at present; also that the standard of expense was generally very much lower than it is in our own day. The same tendency which has influenced so many of our great public schools is apparent in the development of the Colleges of Oxford and Cambridge. Starting as institutions for the education of all classes, and especially for the lower middle class, they have in a considerable degree become annexed by the more wealthy, and a public school or University education is now considered to be the privilege of the more wealthy; whereas formerly they were designed for the training of all who had sufficient ambition or enterprise; and Oxford and Cambridge offered every facility to those who were prepared to face poverty and hardship in the pursuit of mental training.

Another tendency which is apparent in the evolution of University buildings, but altogether dissociated from the conditions above mentioned, is that of centralisation. In mediæval times large and important colleges were the exception, and small halls, each intended for the housing of a few students, was the rule. Some of the largest foundations, both at Oxford and Cambridge, have been formed by the absorption of a number of these smaller abodes, which usually have disappeared in the process. One Oxford College—Worcester—is a conglomerate of these smaller establishments, as its present conformation clearly shows.

While the change in the age of the students revolutionised the arrangement of rooms, the increased size and scope of the colleges afforded occasion for larger and more comprehensive schemes of planning, and made effective grouping of the buildings possible.

With regard to the former of these changes, the mediæval arrangement was as follows:—A set of college rooms consisted of one fair-sized room, with two or more rooms (usually two) opening from it. The larger room was used as a dormitory, in which a few students and a master of arts slept, the master being placed there to keep order, while the smaller rooms were used as studies in the day-time. So long as the students were mere boys this arrangement was reasonable: not, indeed, dissimilar to that in use at some of our public schools, where a "præfect" or "monitor" keeps order in a dormitory of younger boys. As the age of students increased, and as the class from which the students were drawn was simultaneously raised, this arrangement naturally gave way to the more modern. The larger room became the living or "keeping" room for a single student, and one of the smaller rooms or studies was the bedroom, another being used as a "scout's hole," as at Oxford, or "gyp-room," as at Cambridge—a sort of pantry, larder, and coal-cellar in one. In many colleges the division of the rooms remains in its original state, the only change made being their reassignment according to the new method. In other cases some structural modifications have been made; and, as it very frequently happened that only the outer walls and the cross-walls which carried chimney-stacks were of masonry, the rest of the structure being mere partitions, such adaptations were easily made without any radical change in the general conformation of the buildings.

The great increase in the size of colleges opened the way to the development of collegiate planning on an extensive scale, and suggested the type which nearly all existing colleges to some extent illustrate—the grouping of the buildings into one, two, or more quadrangles of rather low buildings (in the original colleges there are never more than two floors and an attic), from which the special and more important features, the chapel, the hall, and the library, stand out as salient features.

The lodgings of the president, warden, principal, master, or whatever he may happen to be called, were usually included in the general grouping, and are seldom distinctive features in the older college buildings. In the present day the head of the college usually requires a more sumptuous abode, which must become an important item in contemporary college architecture; while the fact that many of the tutors and fellows are now married will also serve to complicate the future of collegiate grouping.

Besides the hall, chapel, and library, it was usual to mark the main entrance to the college (often, too, the side entrances, or entrances to a further quadrangle) by towers—a reminiscence, no doubt, of defensive architecture, in which all approaches had to be specially guarded.

For the students' rooms the general arrangement was almost invariably as follows: a staircase, entered from the quadrangle, led to rooms on either side, and, as there were three floors, opened up six sets. This arrangement is usually adhered to in contemporary schemes, and, I think, with good reason. The alternative plan, adopted by Mr. Butterfield at Keble College, is to make the main block of rooms sufficiently wide to accommodate two sets in depth, with a central corridor from which the rooms open. I do not think, however, that this arrangement is likely to come into general use. It is not favourable to effective grouping, as the blocks of rooms are apt to look bulky and clumsy; and, as regards economy, I made on one occasion the most careful comparative estimate of the two methods, and found that the old gave an equal amount of accommodation at considerably less cost. In this case *stare super antiquas vias* seems to be the best policy on practical no less than on æsthetic grounds.

In the few cases in which a departure from the ancient type has been attempted the result appears to me to be unsatisfactory and destructive of collegiate character. At Keble College the architect's intention evidently was to keep the ordinary buildings entirely subordinate to the chapel; and, as the chapel is very unusually large and lofty, this idea is not altogether unrealised; but it would have been far more completely and satisfactorily developed had the ordinary rooms been planned upon the old-established system. The result seems to be no less subversive of collegiate effect if the ordinary buildings are of four instead of three floors. The "new buildings" at New College, erected by Sir Gilbert Scott about 1876, seem to me to fail for this and for other reasons. At King's College, Cambridge, a new group of buildings has in recent years been built by Mr. Bodley. Here again a third story was insisted on by the College; and, needless to say, everything that was possible has been done to give them, in spite of this condition, a truly collegiate character. The fact that this endeavour, even in Mr. Bodley's hands, has proved less successful than the two-story arrangement appears to me to be the best possible confirmation of my opinion that a third story is necessarily unsuitable to such architecture; while the scheme—that of a three-sided quadrangle, with the fourth side open to the river—remains, and may long remain, incomplete in consequence of this unnecessary development of height. The scheme might have been completed for about the same cost as the present truncated instalment.

In both these instances the extra story had been, I believe, forced upon the architect, and the motive for this dictation was, no doubt, in a large measure a desire for economy. My conviction is that there is no economy secured by piling up buildings to an unusual height. I have tested the comparative cost of buildings of two, three, or more stories, with the following result. A building of two stories, with floors of moderate height, is definitely more costly, for the same accommodation, than one of three; but four or more floors are not more economical than three. Of course, where ground is limited in extent or of very high value a new factor is introduced; but in the case of college buildings this is rarely the case, and there is seldom any valid excuse for departing from the old type.

In fact, the old system of college planning, in my opinion, still holds its own, and needs but few modifications to bring it up to date. A few practical requirements consequent on the change of custom have to be met. For example, when a set of rooms was composed of a large dormitory and two smaller studies, it was rather advantageous than otherwise that the smaller rooms should be approached through the larger. This was conducive to quiet in the studies, and caused no inconvenience. Now it is essential that living-room, bedroom, and cupboard or "scout's hole" or "gyp-room" should be independently accessible, though there is some advantage in having a door between the sitting-room and bedroom, as it allows the bedroom to some extent to benefit by the sitting-room fire, and enables the occupant to obtain more breathing space at night. Again, there is no need for the "scout's hole" or "gyp-room" to be as large as one of the old studies; it need be little more than a mere cupboard; and one of the most modern ideas is to provide for a group of rooms a kind of general "scout's hole" or pantry, with a sink and gas-stove, &c. These are the principal points in which a modern set of rooms differs from the ancient type, which, on the whole, has vindicated its claim to be applied to modern schemes as the best and most economical arrangement.

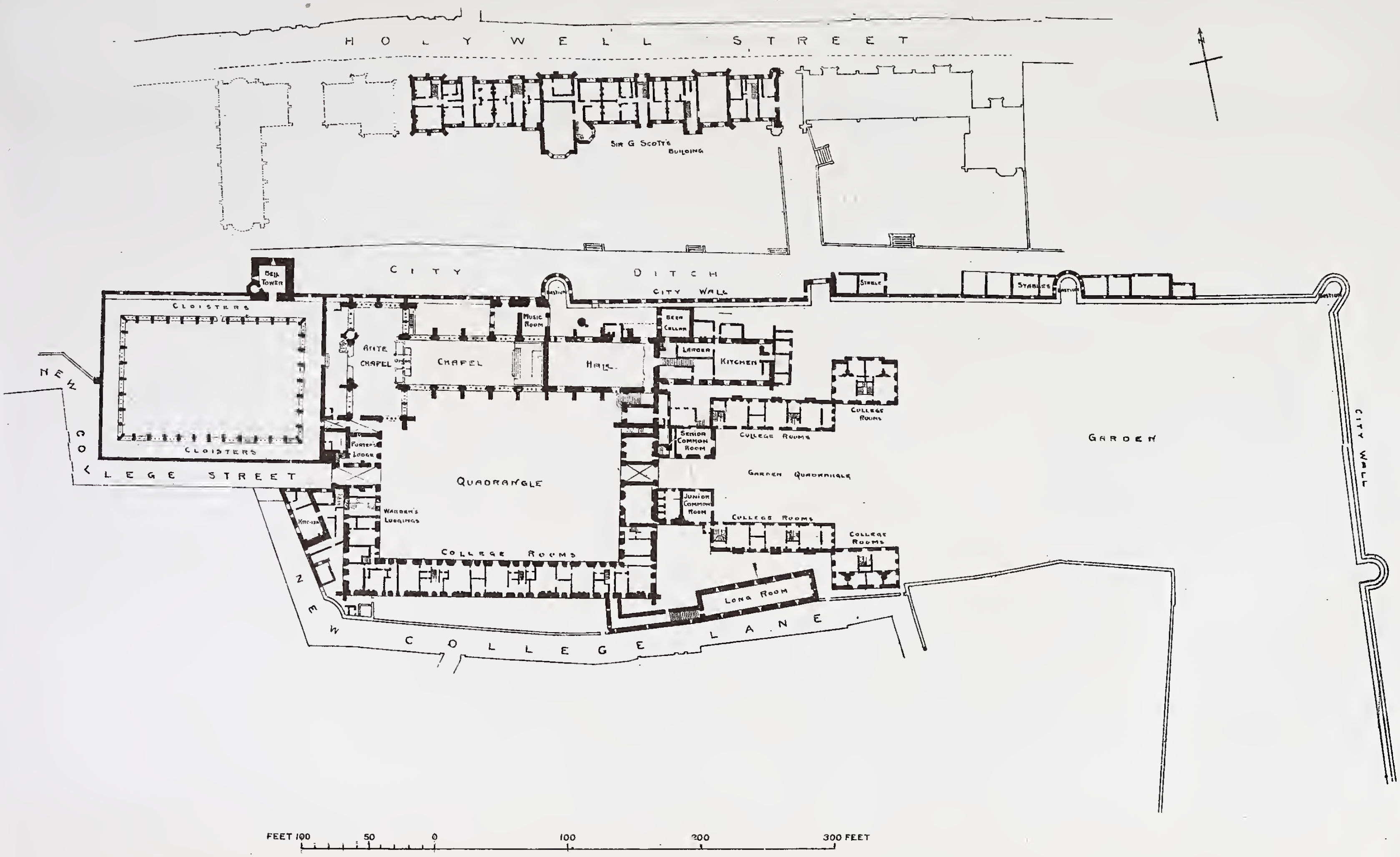
Before passing to other phases of collegiate architecture it may be worth while to consider what was the most highly developed idea of a mediæval college; and of this no better example could be selected than New College at Oxford, which, in its ancient form, showed a complete design carried out at one time. In order to realise William of Wykeham's idea it is necessary to remove in imagination certain later additions which have obstructed the original intention.

The chief of these is the addition of a story to the main quadrangle. This raises the buildings to the same level as the gateway tower which originally surmounted them, and also decreases the predominance of the chapel and hall. William of Wykeham was a great Churchman, and his intention was to make the chapel the chief feature of his main quadrangle. The great height and scale still preserve its relative importance, though its predominance over the residential portion of the quadrangle is considerably reduced by the added story. The dining-hall is built in continuation of the chapel, and originally the two were under a continuous roof. Sir G. Scott in his restoration raised the pitch of the chapel roof, divorcing it from the line of the original parapet without, and from the lines of the reredos within, and it makes an exceedingly awkward angle with the parapet. The floor of the dining-hall is raised several feet above the ground, while the chapel floor is on the ground level, so that the internal height of the hall, though lofty, is greatly less than that of the chapel. The approach to the hall is by a staircase opening from the main quadrangle, under a tower rising considerably above the hall and chapel. In the tower are a series of chambers, the purpose of which is not very obvious, but which have the advantage of being in all respects as William of Wykeham left them.

Opposite the main entrance to the college was the library, the conformation of which can still be traced, though it too has been modified by the addition of a story and the modernisation of the windows. An archway passing beneath the library gives access to the garden quadrangle, originally formed by two short lateral projections, one of which still retains its ancient timber roof, and was probably designed for its present purpose, that of a common-room for the fellows.

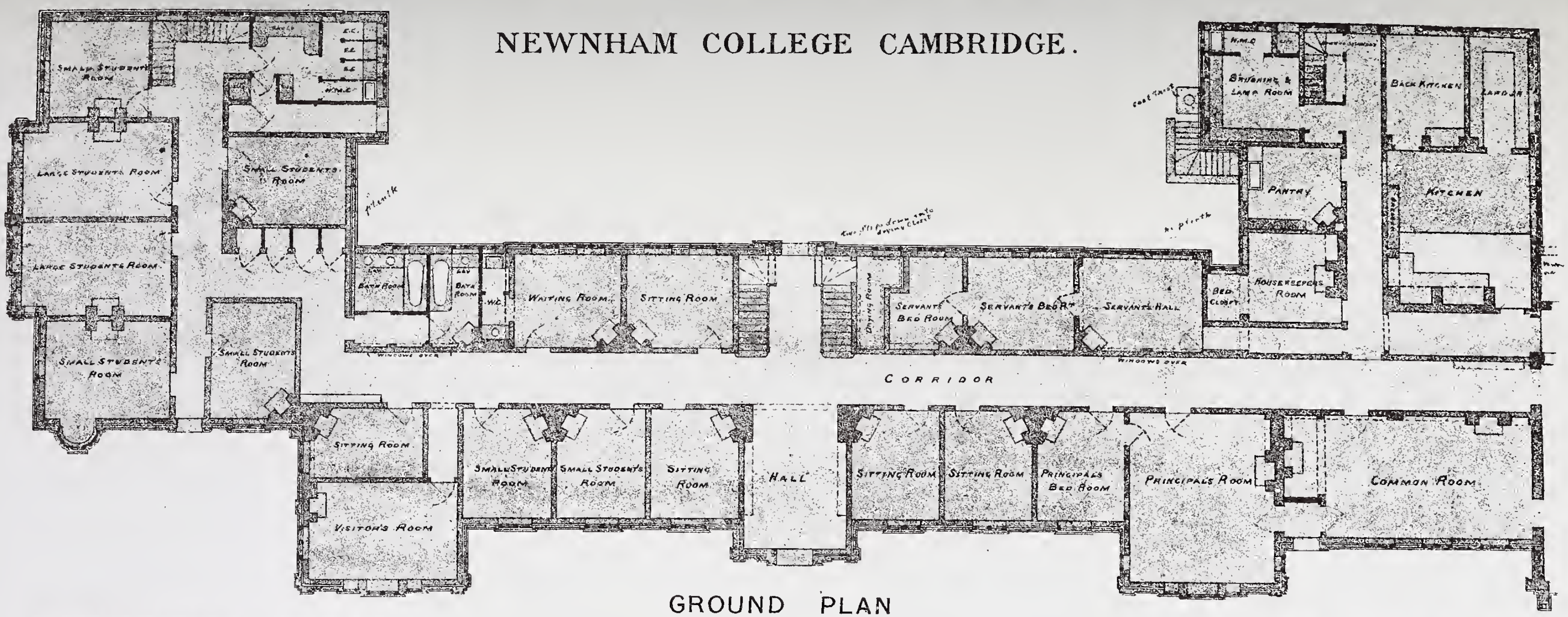
To the west of the chapel, a position no doubt dictated by the conformation of the site,

NEW COLLEGE OXFORD.

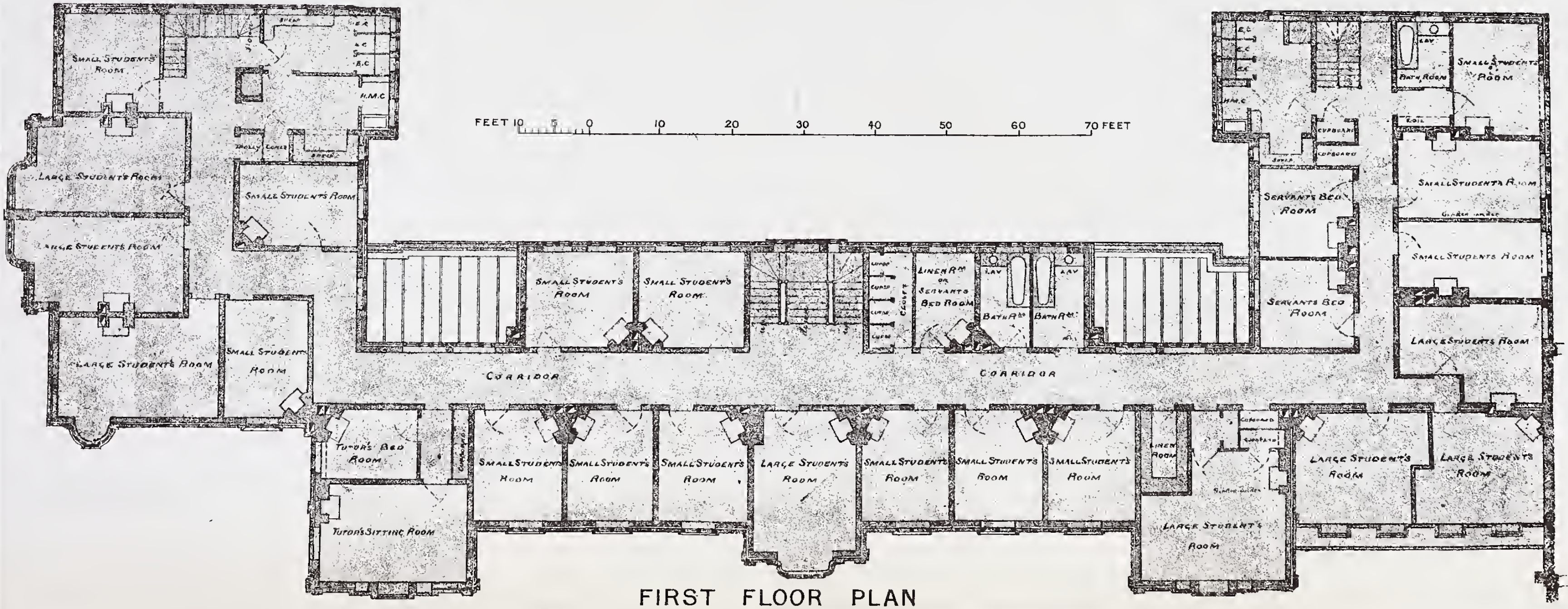


C.F. KELL & SON, PHOTO-LITHO, 8, FURNIVAL ST HOLBORN, E.C.

NEWNHAM COLLEGE CAMBRIDGE.



GROUND PLAN



FIRST FLOOR PLAN

C.F. KELL & SON, PHOTO-LITHO, 8, FURNIVAL ST HOLBORN, E.C.

are the cloisters enclosing a garth, intended for and still used as a burial ground, and adjoining these, at the north-east angle, is the very simple but effective bell-tower, the great severity of which is no doubt due to its position as an outwork of the city wall.

The great predominance of the chapel over the adjoining buildings, the cloister, and the tower are somewhat exceptional features in college architecture, and serve to emphasise the ecclesiastical intention of the founder. The same idea is manifest in a college of modern foundation—Keble—which, as a memorial to a well-known Churchman, was founded with a somewhat similar view. Other colleges which bear the impress of a specially ecclesiastical ideal are Christ Church and Magdalen at Oxford and King's at Cambridge. In the more ordinary type of college the chapel, hall, and in many cases the library, are salient features in the grouping, but their relative importance varies very considerably.

So far I have spoken of the ordinary type of college buildings as developed in the Middle Ages, and adhered to in the sixteenth and seventeenth centuries. Modern civilisation has, however, given birth to new phases of collegiate life, which involve certain modifications of the original character of the buildings, though the collegiate standard must still retain much of its influence.

One of these is the establishment of colleges for women both at Oxford and Cambridge. It is clear that the life in these must necessarily be of a more domestic character than in colleges for men, and, if the style of architecture follows the requirement, the result will be something which may be called "Domestic Collegiate." Access to the several students' rooms can no longer be from staircases entered direct from the open air: the approaches must be properly enclosed, and the passages warmed. In the building I illustrate—Newnham College at Cambridge—the deviation from the original type is greater, because the system of the college is that of subdivision into halls, each of which is on the whole complete in itself (a reversion, as it happens, to the original arrangement), the only features used equally by the entire college being the great hall and the library, the lecture-rooms and the laboratories. Moreover, the scheme as it now stands has been developed piecemeal; has started from small beginnings and grown up step by step, each instalment of the group of buildings having been supposed, at the time of its erection, to be the last, until the pressure of applicants suggested a further extension.

Another building which also deviates from the original type on account of a change of purpose is Mansfield College, which contains all the main features of a college except rooms for students. Mansfield College is intended to be a centre of life for students of a particular religious denomination living in the colleges of the University, but assembling at Mansfield for services, lectures, and for social converse. The only residents are the principal, a bursar, and one or two tutors. Mansfield College, therefore, consists of a chapel, a hall, and common-rooms, with the requisite offices, bursar's and tutors' rooms, a few bedrooms, and several lecture-rooms, a large library, and a principal's residence. This scheme suggests a somewhat different system of grouping from that usual in colleges of the ordinary type; though, at the same time, it was for many reasons desirable that the group of buildings should as far as possible reflect the character of Oxford collegiate buildings. The drawings which I show will explain how I have endeavoured to meet this somewhat novel problem.

Even now we have by no means exhausted the developments of collegiate architecture, though I have reached, in respect of practical experience, the end of my tether. The most modern—many will say the most advanced—type of collegiate arrangement is differentiated from all that has so far been described by being forced to meet the requirements of elaborate scientific training. So great, indeed, are the present claims of science that it seems likely that in the future the parts of a college which are devoted to laboratories and workshops will bear about the same relation to those assigned to the "Arts" as the sack bore to the bread in Falstaff's tavern account! We need only summarise the requirements of an up-to-date building. There will be found arrangements for the study and teaching of chemistry, botany, zoology, physiology, anatomy, histology, physics, mining, metallurgy, engineering, mathematical drawing, and, I may add, "&c., &c.," as I am by no means sure that I have named much more than a majority of the subjects of education to be provided for: at least, I have given far more than my past experience runs to. And if any of my audience desire to form an idea of the complicated planning involved in a very moderate portion of these requirements he may refer to the Institute JOURNAL for March 1894, which will give him some idea of the sort of problems which have to be faced.

Whether the complication of subjects, whether the supersession of the ancient by the modern *curriculum* is necessarily of advantage to education, it is needless to discuss here. At least, one cannot altogether allay the qualms with which one views the invasion of the old fanes of learning by the modern idea, especially if this involves the expulsion of the most splendid language and literature of the ancient world. For the architect it means "fresh woods and pastures new"—new problems, which he may, if he can, turn to as excellent artistic use as was possible under the older *régime*.

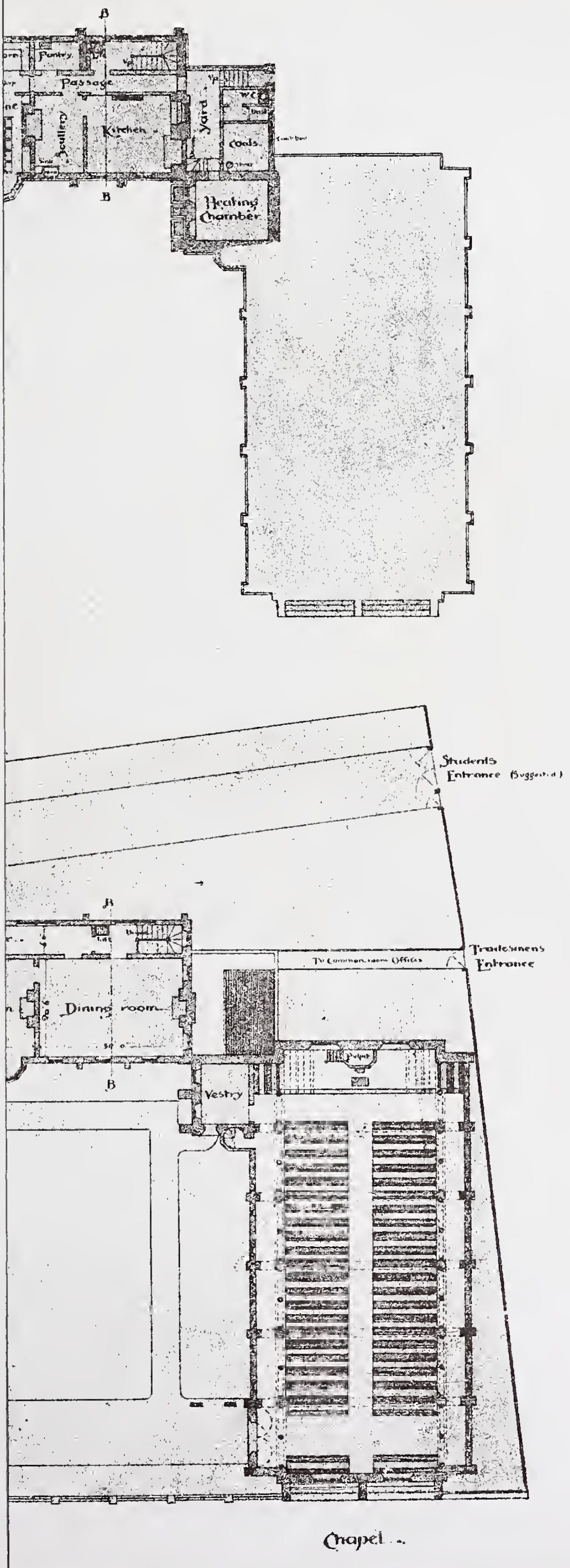
DISCUSSION OF MR. CHAMPNEYS' PAPER.

The President, Mr. ASTON WEBB, A.R.A., F.S.A., in the Chair.

MR. W. M. FAWCETT, M.A.Cantab., F.S.A. [*F.*], said he had much pleasure in proposing a vote of thanks to Mr. Champneys for his very interesting Paper. He did not know Oxford quite as well as Mr. Champneys seemed to do, and could not quite follow some of the alterations he spoke of as having been made there. Cambridge, however, he knew well. One thing struck him as rather interesting, viz. that the system of planning the old colleges was taken directly from the old manor-houses of the period, and they had kept up that character. The old manor-houses, as they all knew, were built round a court. The colleges were never conventual buildings, but were houses of the domestic character of the time; and so far as the colleges for men were concerned, this arrangement seemed to have been universally accepted and followed up to the present time. But in later years in colleges for women, and in some respects for men, a totally different plan had been devised. Instead of taking the mediæval manor-house as the type, they had taken the modern large house. The hall was part of the house, all the rooms were grouped round it, and the offices branched from it. They had substituted the luxury of a modern house for the austerity of a mediæval one. Nearly all the new colleges that he knew of had been built on that line.

MR. W. D. CARÖE, M.A.Cantab., F.S.A. [*F.*], who was called upon by the President, said it had been a great pleasure to him to see Mr. Champneys among them and to listen to his Paper. He very warmly seconded the vote of thanks Mr. Fawcett had proposed. Those who had seen Mr. Champneys' works both at Oxford and Cambridge must have felt that he had carried forward, not only the ancient planning which he had described so well, but the feeling of the ancient architecture connected with their colleges, even a step further than his predecessors. He happened to be at Cambridge when Mr. Champneys was erecting the buildings at Newnham, and it was a great delight to see them grow. There were then three blocks, he believed. One was erected when he first went up, another was erected while he was in residence, and another began to grow before he left, and each block of buildings not only had a charm of its own but a most charming harmony with its neighbours, and at the same time that delightful variety which rejoiced one so much in the ancient buildings. A year or two ago he paid a very interesting visit to Oxford with a view of seeing the growth of the later architecture, and he felt very much the same there when he saw the buildings at Mansfield and those buildings Mr. Champneys had erected at New. He had listened with great interest to Mr. Champneys' remarks upon "gyp" rooms, knowing as he did that a "gyp" room of the old type certainly was not all that could be desired for modern luxurious comfort, which at the age of an undergraduate one was perhaps

PLANNING OF COLLEGIATE BUILDINGS.



F. KELL & SON, PHOTO-LITHO, 8, FURNIVAL ST HOLBORN, E.C

rather too apt to enjoy. But he believed it was the case that, in more recent planning, the single "gyp" room to accommodate the whole staircase had been almost entirely adopted, and with advantage not only to the served, namely, undergraduates but also to the servers, the bedmakers. He had consulted those estimable ladies from time to time, and he had been assured that the amount of running about was very much decreased, and that there was a great deal more possible cleanliness. Mr. Champneys did not go so far as perhaps some of them might have liked to hear in connection with the more modern universities, which were of such an entirely different type from the ancient ones. With regard to them one could not help feeling that one ought to look in university buildings, not only to the most convenient type of plan, but also to a continuation of that admirable dignity of architecture which the ancient builders had left them. He was not quite sure that that had always been realised in modern college work. He felt very strongly, indeed, that if there was one place where architecture of a noble and dignified, and at the same time simple type might be looked for it was at the universities which were growing in their great towns, and he was sure that they looked forward with no little satisfaction and anticipation to the great university which their President with Mr. Bell was about to create at Birmingham. That building seemed to him to have great dignity and quietness, and at the same time to have that flavour which belonged essentially to this modern time, and was in no sense a copy of the past—precisely that flavour which the mediævalists would have given to it if they had remained down to these days. One of the chief difficulties in connection with modern universities of that type was the difficulty of sites and the expense connected with them; therefore he was afraid it must be more or less the case that the buildings might have to be carried to a greater height than one would wish. But he was very glad indeed on that account to hear Mr. Champneys say that, with regard to cost, there was no great advantage in proceeding beyond three stories.

Mr. JOHN W. SIMPSON [*F.*], who was invited to speak by the Chairman, said he had listened with very great interest to Mr. Champneys' Paper, but he did not feel that he had any useful remarks to make on the subject as he had little or no experience in such work. The buildings which had been entrusted to him had been more in relation to secondary education than collegiate work. He did, however, join very heartily in the vote of thanks which had been proposed; he had enjoyed listening to the Paper very much.

The PRESIDENT, in putting the motion, said that they were all very much obliged to Mr. Champneys, who had had so much experience in work of this kind, for coming down to read them a Paper on the subject. He was afraid that he himself was not able to add anything to the discussion, delightful subject as it was. Of course, the particular quality they admired so much in the ancient collegiate buildings was, he was afraid, a thing of the past; and those who had an opportunity of building in a university town could not —indeed, dare not—do anything but endeavour in a humble and quiet way to follow the great examples of beautiful work surrounding them in those towns. Certainly they had no right to impose themselves more strongly on those towns than they could help. At the same time, when he went to Oxford or to Cambridge he could not help feeling a certain pride at seeing how well the modern work toned down and stood in comparison with the ancient. It was a most difficult thing to do, but he thought, nevertheless, that modern architects had to a great extent achieved it. Mr. Caröe had already referred to Mr. Champneys' work at Mansfield College and elsewhere, which certainly appeared to meet that requirement. There were many other modern buildings in Oxford that could be mentioned: the additions to Trinity and Brazenose, the schools there, the additions to Magdalen; nothing could be more delightful than the latter and many others. At Cambridge, again, they had the additions at Peterhouse and at Christ's, at Pembroke and at King's, which Mr. Champneys had referred to, where he must say the difficulty of the extra story had, he thought, been got over uncommonly well. He had just now occasion to go to Cambridge often, and it was always a delight to him to cross to the other side of the river and see that gable of the new portion of King's, which seemed to go right down into the water and right up into the sky. The difficulty of a tall building, at any rate as seen at the end, had been, he thought, most successfully and charmingly met. There were, of course, many others in Cambridge also. Architects so seldom congratulated themselves that he really thought they were entitled to a little congratulation over many of the buildings that had been erected in Oxford and Cambridge. Coming to the new universities in other parts of the country, he was afraid that it was absolutely essential to depart from that type which they all admired in the older cities. To begin with, a large number of the modern universities were not residential at all, and that swept away at once a great deal of that quiet domestic work which added so much to the value of the semi-public buildings interspersed amongst them. Then, again, unfortunately, in a great many of them the chapel was absent, which was a great loss of opportunity. He was speaking, not of college schools, but of universities. When the college was non-residential, the chapel did not appear. When it was non-residential, the dining-hall took a much smaller part in the group of buildings, becoming little more than a luncheon-room. But, on the other hand, in a modern university the great assembly hall took a much more prominent place than in the old university. It often struck him in going through the old colleges how very inconspicuous the teaching portions of the buildings are, both at Oxford and Cambridge. There was the dining hall and the chapel; the library, which, of course, was an educational part; but there was very little to be seen of the lecture-rooms and class-rooms. As a rule these rooms did not form a distinctive part of the design of the buildings. But in the modern university the class-rooms, lecture-rooms, and workshops formed the main group of the buildings, and he thought they would be unwise if they attempted to repeat the quiet calm of garden and wall which so distinguished the ancient universities, but should rather attempt to obtain the desired effect in some other way. The great university which had been referred to and which Mr. Ingress Bell and himself were now erecting was an assemblage of lecture-rooms, class-rooms, mess-rooms, and great workshops for engineering, mining, metallurgy, and suchlike, together with the great hall in the centre in which the students met, and where the great functions to take place from time to time would be held. The requirements were so different, the needs of the students so different, from that of an arts university that one had to look for an entirely fresh type of building. It was not for him to discuss which was the best form of education for young men. The sound of the hammer and the forge, however, was making its way even into Oxford and Cambridge. But in these other buildings there was, he believed, very little heard except the anvil and the forge and the blast-furnace. At any rate, it was an opportunity for architects to develop some distinctive English feature of a university, which he hoped in the future might be carried down as something of interest and of worth which had been done in their time.

Mr. CHAMPNEYS, in briefly responding to the vote of thanks, said it was not the first time he had read a Paper before the Institute, and it had always been a very great gratification to him to be asked to do so.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS 183
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9, Conduit Street, London, W., 21*st Feb.* 1903.

CHRONICLE.

Death of Mr. Penrose.

The mournful news of Mr. Penrose's death was communicated to the Institute by his son, Dr. Frank Penrose, on Monday morning. Considering his great age and his so recent sad bereavement, those who had noted the announcement in *The Times* two or three days before that he was very seriously indisposed were not wholly unprepared to hear the worst. He died at five o'clock on Sunday afternoon, having survived his wife but twelve days.

The President, in making the announcement to the Meeting on Monday, said: "My first duty this evening is a sad one. Some of you, perhaps, may have heard already of the passing away of our loved and most esteemed member, Mr. F. C. Penrose. He died yesterday afternoon. The funeral is to take place on Thursday next, and any members of the Institute who will go—and I need not say that the family would appreciate very much the attendance of members of the Institute—may hear of the trains and the time by applying to the Secretary, Mr. Locke. It was naturally the desire of the Council to approach the Dean and Chapter of St. Paul's with a request that the body of the late Surveyor to the Fabric should be laid in that building; but we understand from Dr. Penrose, the son, that it is the wish of the family, and was also the wish of Mr. Penrose himself, that he should be laid in the church near which he lived, at Wimbledon, by the side of his wife, who has only predeceased him by a few days. We therefore desire to respect the wishes of Mr. Penrose and his family, and do not propose to approach the Dean on that point. We hope that in due course we may see a memorial of some kind erected in the Cathedral on which for so many years he bestowed such loving care. It is hardly necessary for me to say anything with reference to our Past-President; you know it all as well as I do. He was born in 1817, and was therefore in his eighty-fifth year. Many of you will remember that only a few weeks ago he stood here and gave us a learned and most interesting Paper on the drawing and construction of the volute in Greek architecture. He seemed then as interested as ever, and he went with full zest into the subject, which was one that had interested him all his life. It is not my intention to-night to enter upon the details of his life and work; that will be better and more worthily done in the Memoir to appear in our Journal. But I may perhaps remind you what a wonderfully many-sided man he was. He was educated at Winchester, and at Magdalen College, Cambridge. He took a most excellent mathematical degree at Cambridge, and received from his College the honourable distinction of Travelling Bachelor in recognition of his attainments. He was no less distinguished in the athletic sports of his University; as no doubt you know, he rowed in the Oxford and Cambridge Boat race, representing his University for three years, I believe. When he came into practice as an architect he erected many buildings. One that I have often noticed and admired is the Choir School at the back of St. Paul's. He was made Surveyor to the Fabric of St. Paul's Cathedral, and he was one of the architects selected to prepare designs for the extension of the buildings of the National Gallery. He was, too, a man of an extraordinary scientific and analytical turn of mind, producing books which will live as long as interest is taken in ancient architecture. His *Principles of Athenian Architecture* was, of course, his greatest work, in which he pointed out those subtle refinements in Greek architecture which had never been thought of until his minute and careful researches made them evident. He was also a great student of astronomy, and produced a book on *The Graphical Method of Predicting Occultations of Stars and Solar Eclipses*, a field of study which led him into researches as to the orientation of temples. One of the last things in which he took an interest, and the study of which occupied him up to the last few weeks of his life, was the orientation of the Druidical remains at Stonehenge. In collaboration with Sir Norman Lockyer, he carried out but a short time ago the most elaborate investigations in order to discover the date of the construction of Stonehenge from its orientation.* As a man we all knew him, we all respected him, and we all loved him. He had a power of intellect and a simplicity of mind which was the constant delight and admiration of all with whom he came in contact. No one could meet him without becoming aware of that beautiful simplicity of character, combined with great intellect, which so distinguished him. He received the Royal Gold Medal, acted as President of the Institute for two years, late in life, and performed the duties of the office without flinching—duties which must have been exacting for a man at his time of life. For many years—and those who remember him then will perhaps regard this as his most delightful aspect—he attended the excursions of the Architectural Association. Those excursions took place with young men, and he was far the senior of them all; yet he always seemed to be one of them, although never would it have occurred to any of those young men to take any advantage of his presence among them. He entered into the sketching, he entered into all the enjoyments of the meeting, and I am sure to those who took part in those excursions one of the pleasantest recollections will remain of that great man Penrose, who attended them, and sketched, and played, and worked together with them. With these imperfect words, Gentlemen, I will merely ask you, as I am sure you will all do most sincerely, to pass a vote of condolence and sympathy with the members of the family which are left. There is his distinguished daughter, Miss Penrose, who is the Principal of Holloway College, and his also distinguished son, who is a physician of St. George's Hospital. I am sure you wish—the Council have already passed the same resolution—that we should pass a vote of sympathy and condolence with the family in the great loss that they have sustained."

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* Journal, Vol. IX., 3rd series, p. 137.

Pending the Memoir to appear at a later date in these pages, a few particulars of Mr. Penrose's long connection with the Institute may be given. He had been a member over fifty-six years, having been elected an Associate in 1846, and proceeding to the Fellowship in 1848. His linguistic attainments served the Institute in good stead in the mid years of last century. He spoke and wrote fluently the principal European tongues, and after the death of T. L. Donaldson he filled for some years the office of Hon. Secretary for Foreign Correspondence. In 1883, in recognition of his services to architecture, the Royal Gold Medal was conferred upon him. Having served the usual term as Vice-President, he was elected to the Chair in 1894, and remained President for two years. His portrait, one of Mr. Sargent's finest works, was subscribed for by members and presented to the Institute in March 1898. A portrait, from a photograph, appeared as a frontispiece to the JOURNAL, Vol. II. (1895). Throughout the whole of his membership his pen was ever at the disposal of the Institute. His contributions to its literature were numerous, and the following list of his Papers in the TRANSACTIONS and JOURNAL bears striking witness to the manysided intellect referred to by the President in his remarks on Monday:—

1850.—"Description of a Method invented by Mr. Jopling for describing the Entasis of a Column or Spire, and some other Curves adapted to Architectural Lines."

1852.—"Remarks on St. Paul's and its Appropriate Decorations."

1859.—"Various Matters connected with St. Paul's Cathedral."

1860.—"A Few Observations on the Models for the Wellington Monument lent to the Institute by the Government."

1863-64.—"A Few Words in favour of the Decimal but against the Metrical System of Measurement; and an Endeavour to show how all the Advantages of the Metrical System may be obtained without giving up the English Standards."

1871.—"On the Decoration of St. Paul's Cathedral."

1877.—"The Optical Refinements of Greek Architecture."

1878.—"On Certain Improvements in Paint Materials invented by W. Noy Wilkins, Esq."

1879.—"Notes on St. Paul's Cathedral."

1888.—"The Temple of Jupiter Olympius."

1890.—"St. Stephen's, Walbrook."

1894-96.—Various Presidential Addresses.

1895.—"The Value of Simplicity in Architecture."

1897.—"The Parthenon and the Earthquake of 1894."

1898.—Address on the Presentation of the Royal Gold Medal to Professor Aitchison, R.A.

1902.—(With Sir Norman Lockyer) "An Attempt to ascertain the Date of the Original Construction of Stonehenge from its Orientation."

1902.—"The Drawing and Construction of the Ionic Volute."

The funeral service was held on Thursday morning at Christ Church, Copse Hill, Wimbledon, and was attended by the President, Hon. Secretary, Secretary, and several members of the Council and General Body.

Special Election to Fellowship.

At the Meeting of the Council on Monday the 16th inst., the following gentleman was elected to the Fellowship under the proviso to By-law 9—viz.:

A. HUNTER CRAWFORD, of 10 Randolph Place, Edinburgh, *President of the Edinburgh Architectural Association.*

COMPETITIONS.

St. Mellons Infectious Diseases Hospital.

The following letter has been received in reply to a letter from the Institute urging amendment of thoroughly unsatisfactory conditions:—

*St. Mellons Rural District Council, Queen's Hill,
Newport, Mon., 6th February 1903.*

Dear Sir,—Your letter of the 21st ultimo has not yet been considered by the Council, but the Committee in charge of this matter do not propose making any modification in the plans already issued.—Yours truly, Ithel Thomas,
The Secretary R.I.B.A. *Clerk.*

New Technical School, Blackpool.

No intimation having been received from the Blackpool Town Council of their intention to modify the clauses in their conditions that were printed in the last issue of the Journal (p. 201), the attention of members is drawn to the thoroughly unsatisfactory nature of this competition. The attitude of the promoters, however, is evident from the following passage in a letter the Secretary of the Institute has received from the Hon. Secretary of the Blackpool and Fylde Architectural Society: "The Chairman of the Technical Instruction Committee called here to-day, and said that as the Committee did not consider the rules of the above competition need amending, they could not see their way to appoint a sub-committee to meet a sub-committee appointed by our Society."

THE TRANSVAAL: TECHNICAL EDUCATION.

Applications Wanted for Appointment of Instructor.

The Education Department of the Transvaal Government has decided upon a scheme of technical education for Dutch orphan boys, which it proposes to make of direct practical value to the country by teaching the elementary crafts of furniture making. It requires for this purpose the service of an instructor who has himself been trained in the best modern English school of artistic craftsmanship. The Government has proposed to found at Irene such a school of about fifty boys, and to pay an instructor £350 per annum, with free quarters.

Irene is a farm developing into a township on the main railway about twenty-five miles from Johannesburg and eight miles from Pretoria. It is on the high veldt, with a climate as good as Johannesburg. Living there will cost less than in the large towns, and it is therefore probable that work can be more cheaply executed there than in Johannesburg.

It is thought that working at first by the side of and partly in conjunction with this educational scheme, an attempt might be made to initiate a separate furniture workshop which might in time, it is hoped, develop into an industrial village of other arts.

The Boers have to some extent retained the art of making simple chairs and benches of local wood with seats of cross strings of hide, and it is thought that by developing their natural talent and utilising their comparatively cheap labour their work may be sold at a reasonable price. The factory would be worked by craftsmen brought out from England, together with the more promising apprentices from the school. The workshop would be managed by a small company of the owners of the Irene Farm and Township, with whomever they may appoint, and the instructor or manager brought out from England.

The owners would supply the necessary capital, and guarantee an extra £150 a year to the manager, would build and equip the workshop, and provide cottages for the craftsmen and their families, who from time to time, as the success of the undertaking might warrant, would be brought out from England. The manager, and possibly some of the craftsmen, would divide the profits on some co-operative system after all expenses and 6 per cent. interest on the capital has been paid, the object of the owners being merely to start the industry and not to profit by the concern.

Orders for some few thousand pounds worth of furniture have already been promised, and the demand will, it is hoped, largely increase when a fashion for such furniture, already started, grows in importance.

Though the position of instructor of the school and manager of the workshop must at first be held under some clearly defined agreement by the same person, with the help perhaps of an assistant, it must be borne in mind that not only may the workshop develop so that a separate instructor may be in time appointed, but also the scheme of technical education may increase and spread to other centres, making scope for a separate ambition in this direction also.

Applications stating full particulars should be made, in the first instance, to Mr. Herbert Baker [*F.*], P. O. Box 4959, Johannesburg.

The Transvaal Government will pay, if a three years' agreement is entered into, the passage and train fare from England to Irene of the instructor and a limited family, also the expenses of importing a reasonable amount of furniture. Further particulars can be obtained from the Colonial Office (*re* passage, &c., only).

Metallic Architecture, Enamelled Terra-Cotta, and Colour are the subjects being treated by Professor Aitchison, R.A. [*F.*], in the lectures now in course of delivery at the Royal Academy. The dates for the remaining lectures are 23rd and 26th February; 2nd and 5th March.

Mr. J. J. Burnet [*F.*], A.R.S.A., Past President of the Glasgow Institute of Architects, has been elected a Corresponding Member of the American Institute of Architects.

THE DUKE of ARGYLL is to preside over the Meeting of the Coal Smoke Abatement Society to be held at Grosvenor House on Tuesday 24th inst. at 3 o'clock. The speakers include Lord Robert Cecil, Sir James Crichton-Browne, and Dr. Shirley Murphy. Members may obtain tickets of admission at the offices of the Society, 25 Victoria Street, Westminster.

MR. HENRY HART, District Surveyor under the London Building Acts for North-West Kensington, died on the 16th January. Mr. Hart passed the Statutory Examination and was granted his Certificate by the Institute in 1856, and obtained his appointment as District Surveyor in 1866.

REVIEWS.

ARCHITECTURAL COMPOSITION.

"A Discussion of Composition as applied to Art," or "A Discussion of Composition, especially as applied to Architecture." By John V. Van Pelt, Professor in Charge in the College of Architecture, Cornell University. New York: The Macmillan Co., 1902.

This work is stated by its author to have been written to meet a demand for a work upon "Architecture as an Art," primarily for the benefit of architectural students. The external and internal titles (which are not precisely in agreement) suggest an inquiry into the principles of artistic, and more especially of architectural, composition.

To deal effectively with so large a theme within the narrow limits of an octavo volume of some 270 pages (of large type, and much diluted with diagrams) might well tax the skill of an acknowledged master of his subjects; but wide as is the scope of the title, it is not so wide as the range of matters touched upon within the covers, and which embrace such diverse topics as character in design, laws of composition; optical effects and illusions; style, arrangement of pictorial compositions; decorative work in metals, papier-mâché, stained glass and mosaic; posters, wall-papers and carpets; with chapters on the planning of houses, stables, and public institutions, giving rules for seating, acoustics, ventilation and heating, with a great deal more in the shape of stray hints, and "tips" to students, which, though possibly of some utility, hardly come under the head of "Composition."

There are, further, sundry excursions into the physiology and metaphysics of perception, which appear to be introduced as a sort of garnish to the subject-matter, but tend to make the treatment yet more diffuse.

And if it might tax the skill of a master to evolve within so limited a compass, and out of such heterogeneous material, anything like a complete or exhaustive analysis of artistic or architectural composition, then surely such an undertaking on the part of one who, whatever his professorial qualifications, would seem to have had little to do with the practice of architecture outside the schools, must be foredoomed to failure, and can only result in a chaos of ill-assorted and undeveloped matter, a confusion of ideas and topics, a lack of practical application, and a shallowness which the pedantry of learned quotations (many in foreign languages and untranslated) cannot disguise. The latter tend only to increase the reader's difficulty in following the slender thread of argument, already obscured by a pointless and inexpressive style, and a singularly uncouth verbiage. The errors in punctuation are so marked as to be tiresome, the abuse of the comma being habitual.

A series of didactic rules of composition, &c., are enunciated by the author, and these do not all appear capable of easy application, nor does he apparently always find it convenient to indicate how they should be applied. There is, too, an air of futility about much of the matter, especially in the chapters dealing with Plan-making and Indication (pp. 188–210).

The instructions given here, and for which the sanction of the "École des Beaux-Arts" is invoked, are deeply tainted with a sterile academic influence, and scarcely take the student a single step in the direction of everyday requirements.

The matter and its treatment strongly suggest that the preparation of a comely drawing is the end for which, in the author's view, the student should strive.

Several illustrations of "Grand Prix" plans are given, but these serve no good purpose whatever, as any virtues which the originals might conceivably possess are entirely lost in the process of reduction, the scale being so microscopic that all detail is merged and the whole becomes quite unintelligible, even with a magnifying glass.

It would be quite a profitless task to attempt a serious criticism of those chapters which deal with composition, for the reason which the author gives in his preface, where he very honestly admits that the matter is borrowed.

"I cannot," he says, "claim that much of this is my own conception, for Composition is the practice of Art, and Art is as old as Humanity. Where the source of the following pages is itself a written page, I have referred the reader to the earlier writer (the latter may, in turn, direct him to a yet earlier origin).

"Some of these are Ruskin, Tolstoi, G. Baldwin Brown, Viollet-le-Duc, Mayeux, Müntz, Magne, Louis F. Day, and Helmholtz."

The author appears to be a very thorough disciple of Ruskin, and would see some of his principles carried into effect in a very uncompromising manner. On page 20, for instance, he quotes his favourite author in advocacy of the strictly utilitarian view of construction for commercial buildings, leaving æsthetic claims altogether in the background; and in his second chapter, in an appeal for Truth, based on Ruskin and Tolstoi, he protests against affectation of bygone styles as being incompatible with truth in modern construction, and suggests that as our ancestors of the Renaissance "were able to construct apparent wood skeleton buildings, filled in with bricks, etc., and make the most beautiful kind of house, at that—can we not do as well with protected steel beams, filled in with armed cement or terra-cotta?"

A downright bad design he appears to think less repulsive than one of uncertain or feeble character (p. 25). He admits in one place that architectural work should reflect the individuality of the artist (p. 13), though later he insists that a house should be designed in a style characteristic of its inhabitant, and in a manner consonant with his habits and tastes (p. 229); and thus, he says, the architect will never hear the reproach, "Oh, yes, that was built by Smith. All his designs are the same."

"A man," he remarks, "who wants to 'splurge' (sic)—not only to entertain, but to shew that he can entertain—should not be housed in a brown Quaker-like cottage, any more than a quiet student in a casino or café-concert."

Other principles he enunciates will be received with caution by thoughtful readers, such as, "A work of Art should be free from such details as are understood only by men of one class"; "There is no mathematical rule in Art. That which looks right is right," etc. A chapter on colour is included which the author would have done well to expunge, inasmuch as it betrays a degree of ignorance of the theory of colour mixture which is astonishing in a teacher of art subjects. "No physicist," he ventures to say, "has yet informed us why most forms of red and blue will not harmonise, except by the vague, negative announcement that 'complementary colours go together.' Pure red and blue are not complementary. The whole must really be a subtle expression of the artist himself."

Here is another proposition, which however will scarcely excite controversy: "Any colours broken up in small enough spaces (as a mosaic) to form, in a measure, a tone will be agreeable," (I give the author's punctuation) "provided the tone is not itself dirty, or disagreeable."

As an instance of the confusion of ideas and topics betrayed in this book, I quote the following (p. 38): "After having seen a building, try to recall the different elements and details, distinctly enough to re-use in the most unimportant affairs; at a reception, for instance, business should be allied to pleasure, by noting new gowns and describing them after a return home."

Little, indeed, can honestly be said in commendation of Professor Van Pelt's book, and as regards most of the diagrams and other illustrations, which he says in his preface are "necessarily his own," they are, for the most part, of so slovenly and careless a nature as to deprive them of any appreciable degree of artistic or instructional value.

Bristol. FREDK. BLIGH BOND.

LEONARDO AND THE BLOIS STAIRCASE.

Spirals in Nature and Art. By Theodore Andrea Cook, M.A., F.S.A. London: John Murray, Albemarle Street, W. 1903.

In opening a book of which he previously knows nothing, a reader feels some curiosity as to what he will find there. Will it contain information, or amusement, or some special literary charm—facts or fancies? If facts, will they be clearly stated and deductions logically drawn from them; if fancies, will they be such as to give play to the reader's imagination, and suggest new trains of thought to him; or will they simply divert an idle hour?

Now here is a book which it is very hard to classify. It does contain an amazing number of interesting facts; it does also contain a great deal of very pleasant fancies. The difficulty is, that the writer so often wishes the reader to look upon the fancies as the facts. In reading his praises of Leonardo's scientific quality of mind, it is impossible not to smile at the entire absence of scientific method in the pages before us; the extraordinary want of logical connection between the evidence adduced, and the fact to be proved; sometimes what seems like wilful misunderstanding of the evidence.

So constant a feature is this want of logic that the reader at last acquires almost a suspicion that the author must be laughing in his sleeve at the notion that his arguments are being taken seriously. The Baptistery at Pisa was *intentionally* built 17 inches out of the perpendicular: the proof is that the "plinth blocks of its foundation tilt evenly and gradually 9 inches in the direction of this lean." And again, Goethe's suggestion that the Garisenda Tower at Bologna was built 10 feet out of the perpendicular to *attract attention* among so many towers, "may well be true, if we are to believe Benjamin of Tudela's statement to the effect that there were *ten thousand towers* in Pisa alone"; and it is clear that Mr. Cook would rather like us to believe that astounding statement. But it happens that even Benjamin of Tudela never told such a palpable fib. What he did say was that Pisa was "a place of great extent, containing about ten thousand *fortified houses*," inferring that all its houses were fortified; and he goes on to explain that "the city has no walls." Not a word of even one tower.

On the title-page of his book, Mr. Cook says that it is written "with special reference to the architecture of the open staircase at Blois, now for the first time *shown to be* from his (*i.e.* Leonardo da Vinci's) designs." Shown to be? Where is the evidence? Amidst a quantity of historical notes, of semi-scientific memoranda regarding plants and shells, and some delightful illustrations, the one fact upon which the writer has to rely is that for three years Leonardo was living near Amboise, and that Amboise is not very far from Blois. The block of building, in which the staircase is a conspicuous feature, was begun about the same time. The architect of this, as in the case of many of the noblest buildings in the world, is unknown. Upon these grounds it pleases Mr. Cook to say that Leonardo must be the missing architect. Among a vast variety of subjects, he made studies of shells and various natural spirals; therefore this spiral staircase. But did Leonardo ever erect any example of ornamental architecture (as distinguished from military)? It would not seem that he delighted in the details of architecture as his contemporaries did. Such features are commonly absent from his pictures; and every architect will recognise in the Blois staircase that, however "renaissance" on the surface and in the detail, the *structure* has its roots entirely in French Gothic.

Nevertheless, and in spite of its want of logic and some want of accuracy, the book is interesting and good for the architect to read. A book written with enthusiasm is never dull, and is often suggestive. There is here no doubt of the author's enthusiastic admiration for Leonardo da Vinci, who was truly the wonder of his age.

Sometimes he claims too much for his hero, as—"he *invented* paddle-wheels for boats." I would refer him to the sketch-books of another architect, Francesco di Giorgio, of Siena, who died seventeen years before Leonardo; among many ingenious contrivances shown in their pages are some for "revolving paddles to boats."

In his last chapter Mr. Cook alludes to the method of drawing the Ionic volute by the aid of a whelk shell, quoting Mr. Banister Fletcher's communication to the *Building News* for August 22nd, 1892. I have not seen that paper, and do not know what claim it makes to originality; but it is only fair to point out that so long ago as May 1846 this method of drawing the volute from a *whelk shell* was fully explained in a paper read before the Decorative Art Society by Mr. E. Cooper, as recorded on page 159 of the *Civil Engineer and Architect's Journal* for the year 1846.

J. D. Crace.

LETTERING IN ORNAMENT.

An Inquiry into the Decorative Use of Lettering, Past, Present, and Possible. By Lewis F. Day. 8o. Lond. 1902. Price 5s. net. [B. T. Batsford, 94, High Holborn, W.C.]

The extension to Mr. Day of the right to say the last word on ornament and its countless applications is to do him but bare justice. He speaks with unquestioned authority on a branch of art whose compass and complexity have too long been its bane. By bringing to bear upon it a quite remarkable power of analysis and reasoning, coupled with a rarer knowledge, he has succeeded in not only laying down its governing principles in such a way as to carry conviction, but demonstrating the truth and accuracy of his conclusions by his work as a designer.

The numerous text-books from his pen constitute a scholarly exposition of his peculiar faculty for systematic investigation, and are the witnesses of his right to instruct. One feels in reading his works how unerring is his critical instinct, and that it is this gift which has enabled him to make the deductions which have so simplified the study of this subject.

In the latest addition to the series, which easily sustains the high standard of its predecessors, and is the subject of this notice, the author—to quote the sub-title of the work—gives us the result of his "inquiry into the decorative use of lettering, past, present, and possible."

To do full justice to such a task within the limits of two hundred odd pages is no easy matter; but in spite of this inherent difficulty, one is conscious that the inevitable condensation which the restriction imposed has been so skilfully and judiciously effected that no sacrifice of essentials has resulted.

The inclusion of a "descriptive list of illustrations" has, in some measure, contributed to the attainment of this end, since much information of a concise nature relating to the source of the examples illustrated has thereby been removed from the body of the book. Frequent references, however, are made in the text to the illustrations, where the author has occasion to institute comparisons, draw contrasts, or emphasise points involving the application of principles of design.

The art of lettering and the consideration of it as a means of ornamental expression are of prime importance to the architect. No one will gainsay that the neglect of this factor in architectural design has led to the disfigurement of many schemes of decoration, and even of buildings, which otherwise possessed merit. It is, unfortunately, so common a practice—happily less noticeable in recent years—for the architect to consider this work as unworthy of his personal attention that one welcomes the opportunity this book provides of awakening in him a sense of its possibilities.

In many cases where it may be supposed that this indifference does not exist it unfortunately happens that the other extreme has been reached, and its expression takes the form of indiscriminate display.

Such an exponent is usually without reverence for tradition, and sets himself to evolve an alphabet so free from its influence as to be at once illogical and grotesque. Being a man apart, his lettering must perforce reveal the master mind. The well-established forms, which have stood the test of time and convenience, are of no service to him, and so long as his creations—or rather perversions—are "original," it is of less moment that they be legible or apt. This passion for shaking off the trammels of convention is the hall-mark by which he may be known, and is his sole claim to distinction.

Such a work as Mr. Day has just produced should be the means of educating those in the former category, and of bringing to a halt the misguided enthusiasts in the latter; while the many who already appreciate the value of good lettering as an adjunct to architectural embellishment will not fail to be stimulated to further effort by it.

The fifteen chapters into which the book is divided, each treating of a distinct phase of the subject, indicate its scope.

The first is introductory, and while among its generalities one takes note of a just insistence on the decorative nature of well-formed and spaced lettering, the numberless uses to which it can be put are made equally apparent.

Chapter II., entitled "The Printed Page," contains a plea for a more beautiful type in our books and newspapers, and is followed by one devoted to the consideration of Manuscript. In view of the fact that manuscript writing preceded the art of printing, the writer of this notice feels that the order of these chapters might usefully be reversed.

Other chapters deal with decorative lettering, inscribed labels or scrolls, hidden meanings, conjoined letters, ornamental lettering, initial letters, ornamental initials, and pictorial initials.

The intricacies of monogram designing are fully entered into in Chapter IX., which is illustrated by many beautiful examples of this fascinating form of lettering. The next—on ciphers—should be read in conjunction with it if the sometimes subtle distinctions between the two classes of combined letters are to be properly understood.

Architects will find Chapter IV.—on monumental inscriptions—perhaps the most interesting and useful in the book. Although the due observance of the principles upon which their successful setting-out depends should not need to be insisted upon, it will be admitted that were they more generally followed Mr. Day would not deem it necessary to devote nine paragraphs to their consideration. These are, however, practical in the extreme; and since they are the outcome of his own experience, nothing further need be said of their value.

The last chapter (No. XV.)—on "Lettering and Ornament"—inquires into the motives for the introduction of lettering into ornament. Without going so far as to say that composition alone should justify its employment, irrespective of its meaning when so used, the author contends that under certain circumstances its adoption on artistic grounds is so imperative that it is desirable in such cases to strain a point in finding a meaning for it. One cannot but feel that since this might lead to inexcusable obscurity it would be better to abandon the lettering and improve the design.

As regards the illustrations, of which there are 186, they are in every sense admirable, and it is gratifying to notice that Mr. Day includes among them many modern examples.

The mention of Mr. Batsford as the publisher is to state in other terms that its printing and "get-up" are beyond reproach, while its usefulness as a book of reference is materially enhanced by a good index.

Frederick Chatterton.

FORMAL GARDENS.

Formal Gardens in England and Scotland: Their Planning and Arrangement, Architectural and Ornamental Features. By H. Inigo Triggs [A.], Joint Author of "Some Architectural Works of Inigo Jones." Illustrated by seventy-two Plates from Drawings by the Author, and fifty-three reproduced from Photographs. Fo. Lond. 1902. Subscription Price, Three Guineas. [B. T. Batsford, 94 High Holborn, E.C.]

The completion, with the third part, of Mr. Triggs's book enables a better judgment to be formed of its value as a contribution to recent illustrated books on garden craft. It can be said at once that this last part sets the whole work in a far better light. The plan and idea of the author become plainer, and one's interest in his books considerably increased. He now gives that desirable and necessary coherence which was somewhat lacking in the first two parts. The same standard of excellence in illustration is maintained as before, and the work is, generally, put together with the same care and thought. There still remain, however, some drawings that cannot be called illustrations of the subject which provoke the same irritating feeling that unpleasantly marred one's enjoyment of the first parts. They detract from the specific interest and are not worthy of the ideal the author clearly set for himself. Affecting an "original" style of draughtsmanship, the author succeeds in producing travesties of beautiful subjects, and of all subjects those of old Scotch gardens which one would have thought were sufficiently inspiring to give the author pause. He seems to have been more concerned in the production of drawings in a "quaint" manner than in the beauty of the gardens themselves. This is a pity, because the drawings are really only affectations; the author clearly has the ability, as his geometrical work shows, to produce excellent pictures.

There can be no doubt, as was pointed out before, the principal interest in these volumes is in the series of fine photographic plates of Mr Charles Latham, who has taken his views, under the necessary limitations, always with much skill and often with the best pictorial results.

It would have served a better purpose, however, from an architect's point of view, had there been less of the pictorial and more of the practical interest in these plates. The illustration of the scheme of the gardens is what is really valuable in a work of this kind, and is most required for practical purposes. Although that idea has been kept in view in most cases, it has been sacrificed in others, apparently merely for the sake of obtaining a pretty picture, and this at times with some of the most interesting subjects of the series. Then, again, some of the more pretentious subjects, obviously very modern, could well have been spared to make room for further illustrations of such an altogether delightful place as Hampton Court, which receives scant justice, or of Wrest Park, Earl Cowper's place near Silsoe, in Bedfordshire, one of the stateliest gardens in England in the French "Grand" manner, of which no views of any kind are included; nothing but a vase and a sundial (both very beautiful and well known) are given to indicate that there is such a place.

From the author's and publisher's standpoint the volumes are undoubtedly well done and can be said to be the best of their kind produced within recent years. Whether they will serve the best of purposes from an artistic point of view is, however, quite another question. Whatever may have been the financial considerations that governed their production and caused them to be published as "popular" volumes, it is much to be regretted that a better course was not taken. For it is more than possible that, published in this way, these books may have just the reverse effect to that which Mr. Triggs doubtless intended, namely, to debase and cheapen a sensitive and retiring art and drag it down to the level of a common cult, the latest society craze—to bring it, in a word, to where Mr. Whistler once said Art herself had arrived.

There seems then yet to remain an opportunity for someone to produce a work on old gardens which, in its aims, shall honestly set aside all popular and unworthy fashionable considerations and produce a result which shall be of real and lasting service.

C. E. Mallows.

MINUTES. VIII.

At the Eighth General Meeting (Ordinary) of the Session 1902–3, held Monday, 16th February 1903, at 8 p.m., Mr. Aston Webb, A.R.A., F.S.A., *President*, in the Chair, with 13 Fellows (including 5 members of the Council), 20 Associates (including 1 member of the Council), 1 Hon. Associate, and visitors, the Minutes of the Meeting held 2nd February [p. 204] were taken as read and signed as correct.

The President having announced the decease of Mr. F. C. Penrose [*F.*], Litt.D., D.C.L., &c. &c., briefly sketched his life and career, and gave expression to the feelings of affection, admiration, and respect entertained for him by all who had had the privilege of knowing him. Whereupon it was

> Resolved, That the Royal Institute of British Architects do record its sense of profound sorrow at the passing away of its distinguished Fellow, Francis Cranmer Penrose, Past President and Royal Gold Medallist; and that a message of the Institute's deepest sympathy and condolence in their bereavement be transmitted to his family.

The following Associate attending for the first time since his election was formally admitted and signed the Register—viz. Chevalier Worby Beaumont.

A Paper on The Planning of Collegiate Buildings having been read by Mr. Basil Champneys, B.A., and discussed, a vote of thanks was passed to him by acclamation.

The proceedings then closed and the Meeting separated at 9.15 p.m.

THE RELATION OF THE PEOPLE TO ARCHITECTURE.

By James S. Gibson [*F.*].

Read before the Birmingham Architectural Association, 6th February 1903.

THERE are many side issues interwoven with this subject, and it may perhaps be necessary to touch on some of them in dealing with the whole matter, though our chief concern will be—"What attitude does the mass of the people assume towards our work?" in contra-distinction to their attitude towards our profession. A brief survey of this phase of the past history of architecture may enable us to gain a clearer view of the present position, at any rate it will give us some material for consideration.

Our knowledge of the works of ancient architecture is almost entirely based on the great masterpieces of the past; many of them have survived wholly or in part to our time, and have been seen by us, or by means of drawings or photographs we have obtained some conception of them. They have inspired in us certain emotions and guided our judgment, enabling us to form a standard of taste by which other works might be estimated. In a still greater degree has this been the case with the general body of the people, whose knowledge of the history of architecture must necessarily be meagre and superficial. We have little knowledge of the homes of the masses of these past days: of the Egyptian, Greek, and Roman Empires, the Gothic periods, and the later Renaissance in Italy, France, and England. What we do know cannot impress us favourably, either artistically or hygienically; while the social conditions of the people during these times were such as we could not now endure. Nevertheless, the architecture of that day, as of ours, expressed very fairly the life of the nation; there were then, as now, intrigues, cross currents, and cabals that probably prevented the best being produced; but these influences were part of the nation's life, and had to be expressed in its works.

The constituent parts of the early nations were practically two, a small body of physically and mentally strong men who gathered to themselves wealth and power, and ruled the mass of the people with a rod of iron. These strong men were the fittest to govern and mould the nation, by force of will and brain power they established themselves; and although the type of nation they founded may not meet with the approval of our time, and has long since passed away, their part was a great one in the world's history. What their motives may have been in building great palaces, temples, theatres, colosseums, and baths need concern us very little; just as the motives of a Carnegie or a Rockefeller in establishing Universities and

Libraries should not trouble us now. In old days we find that the ruler, whether Emperor, Pope, or Dictator, employed on his great projects the services of the best architects, sculptors, and painters. Intrigues, artistic and political jealousies, often hindered and marred the complete success of these works; but we have abundant evidence of the direct, close, and cordial relations of the ruler and the artist. This is the greatest stimulus to success, the strong man dictating in general terms his desires, and taking a keen appreciation in the artists' endeavours to embody them in lasting materials. The artists, then as now, would naturally gravitate towards the great centres of life, and the smallness of the nations made the selection of the best artists for these works a comparatively easy matter.

No doubt the works of Phidias, Bramante, Michelangelo, Raphael, and Palladio were known to the people by story and fable, just as those of Rossetti, Sargent, Whistler, Brock, and Bentley are known by means of the newspapers and art publications of to-day. I do not know whether the people, whose lives were either spent in wars or in building these great temples and palaces, living a life of hard and unremitting toil on the barest of necessities, took any interest in these great buildings; perhaps they took no more than the bricklayer of to-day takes in the palace in Park Lane of the South African millionaire, happy only to "knock-off" at the first sound of the foreman's whistle, light his pipe, and wend his way home to the "missus," or to the public-house at the corner which supplies him at present with both the spirit and the art of life. A hard and unlovely existence is the portion of them both; and we also know that when it became so hard as to be unbearable, then the people rose, conquered their rulers, and in blind rage destroyed these buildings, paintings, and sculptures—the primal savage instincts finding an outlet in these paroxysms of destruction, and slowly a new order of civilisation was evolved.

In times such as these has the destruction of so much that was beautiful been merely because of the association of those things with the power against which they fought; or was it because of any hatred of art that lurks in the heart of the natural man? Civilisation is the mother of art, and each phase of civilisation will bring forth a new type of art. We find in the savage tribes the awakening of the spirit of beauty, but their efforts to visualize that spirit are weak and child-like. It is as we ascend the scale of civilisation that we find this spirit growing powerful and influencing the life of the people. We find great architecture is contemporaneous with the best periods in the history of the nations producing it. Force, vigour, intellectual power were necessary to its creation, and no architecture worthy of the name will ever be produced unless these qualities are predominant.

The strength and power in old days were concentrated in the hands of a few men, their aims and ideals were totally different from those of our day. On the one hand they had savage and turbulent tribes to keep in subjection—this probably found occupation for their masterful and often cruel animalism; on the other hand they had a civilisation to build up and improve—this was often an outlet for their love of display, or an ambitious dream of marking their personality on the pages of history so as to excite the wonder and admiration of posterity. Whatever the motives actuating them, the result has been the creation of great works of architecture, painting, and sculpture. The people, living in the shadow of these mighty castles and palaces, without doubt found in them the expression of a dominant force: they were to them the embodiment of that power which ruled their lives and which ruthlessly used them for its own ends. Their attitude towards our art must have been that of fear and awe. Architecture, as a pleasure-giving power, was something divorced from their life: it existed only for the kings and rulers.

We may conclude, therefore, that these great masterpieces of ancient architecture are the direct expression of the nature of the dominant class, and I think that this clearly shows that the individual mind has, thus far in the world's history, proved the most successful means of producing great art.

During the Renaissance periods we find a new element in the life of the nation; an increasing and powerful middle class has appeared influencing the art of their time. Guilds of handicraftsmen have become larger, the volume of works has increased; the world is gradually shrinking by reason of greater inter-communication, while a considerable body of the people take an active and healthy interest in the arts—in masques, carnivals, processions, plays. We still find, however, that the social and political power is in the hands of the few, and this minority inspires the artist to greatest efforts. The people, no doubt, are more alive to the beauty and grace of the buildings, paintings, sculptures, jewellery and fabrics amongst which they live, and regard them as joyful things, making towards the sum of human happiness; but the evidence of any direct influence of the mass of the people on art is still far to seek. The appreciation by the people of the efforts of the artists may have inspired them to do worthier work; but the work was done at the command of the ruling classes and for their pleasure.

It is a far cry indeed from these days to ours, and the changed conditions of life had to bring about changes in architecture. The continuity of tradition has been broken—guilds, handicrafts, and trades have been abolished or re-organised on lines entirely antagonistic to the old. Distance has been practically annihilated, the whole surface of the globe has been brought near and made clear to our eyes. Time has been conquered, and we live at a pace a hundred-fold faster than life at any previous period in the world's history.

We have seen the results of former phases of national life in the great art of the past; we are responsible for that of the present and shall mould that of the future; let us consider the conditions surrounding us, so that we may know how to work to the greatest advantage. We live under a democratic form of government, whether the figurehead be king, emperor, or president, and the affairs of the state are made a part of the life of the people. The people, within certain limits, are invited to take part in municipal and national government, to carry on national education, and many other important matters. Taking national life first, we find that the suffrage is wide and comprehensive, in some advanced communities extending to man and womanhood suffrage irrespective of property qualifications. In an old country such as ours, it will be found that all sorts of vested interests will prevent the early adoption of the most advanced reforms; they will come late, but they must come, if we are to live as a nation. We have a form of government which is among the best in existence, it gives freedom to the individual within all reasonable limits.

The parliamentary attitude towards architects has always been an unfortunate one, it classes them as a part of the civil service—pretty much in the same category as telegraph operators or Somerset House clerks. The result has been the creation of an idea in the minds of parliamentarians that architecture is not an art at all, but merely consists in the covering of so much land with buildings of a more or less useful kind.

When Palaces for the King have to be built, there is no searching for the master builder, for the man whose imagination can conjure up visions of beauty and mystery; there is no careful inquiry for the evidences of that new talent which might evolve the fitting home, and show the world that the achievements of the past might be rivalled in the present. The civil service servant steps in, and the gentleman who efficiently looks after the drains and the heating apparatus proceeds to design the palace, and the nation accepts it without question, and is asked to see in it a work of art; thus false views are spread abroad and taste is vitiated.

The post offices throughout the country are not one whit better than the palaces, and almost all the railway stations are lost opportunities. Yet these are the very works by which the national capacity in architecture should be expressed in the highest degree, the greatest artistic power should be employed on the finest subjects. This condition of things is not confined to our own country. In America the same thing has occurred, as far as I can judge by illustrations; the official architecture, as expressed in their Senate Houses, Capitols, and buildings of a like nature, is only dead and uninteresting commonplace, and bears an unworthy comparison with the work done in that country for private individuals. This being the mental attitude of those in authority towards our beloved art, how much less appreciative must be that of the general public, who have been taught to regard bureaucracy as the flower of civilisation.

When you come to analyse it, you will find that the power is in the hands of the few to-day just as much as it was in the old days, but the ideals of the few have changed greatly from the ideals of old.

The controlling force of all social, municipal and parliamentary life is no longer brain power, intellectual acumen, largeness of vision, and high ideals: it may be summed up in the one word "money power," that is the one lever that regulates the movements of the world. Do we wish to educate the young, to make a cultured and capable people? Then we institute a department which appears to think its chief duty is accomplished if it prohibits any new type of building and gets the cost down to the lowest degree. The educational influence of a beautiful building does not seem to be credited, it evidently has no money value; life, as viewed through official spectacles, does not seem to require it, and so the human atoms are treated as so many units of a vast machine, and we think that the mechanical acquisition of a lot of useless knowledge will compensate for the non-awakening of the sense of beauty. Education does not consist of the possession of an exact knowledge of dates or the accumulation of rules, but rather in the awakening of the faculties of reason, of the opening of the mind to the influences of science, art, and nature. To achieve this result it is a matter of little national consequence whether a school can be built for £10 per scholar or £30 per scholar: if it must be put on a commercial basis, it will always repay the nation to form the minds of the young on beautiful surroundings. I am confident no good results will ever be obtained from those huge barracks of buildings where 800 to 1,000 children are herded together, and education is imparted with the mechanical regularity of a piece of clockwork. I think the day is not very far distant when the schools will be small, the classes smaller, the buildings airy, light, cheerful, homelike, and standing in ample playing fields and gardens.

When we turn to the streets of our large towns, how rarely do we find any continuity of design, any evidence that the owner has had the slightest regard for his neighbour on either side of him. I often think, on looking at street frontages, how very rarely must the architect have got his own way. The owner surely must have insisted on having his front to stand away from or kill his neighbour's, making it a sort of permanent advertisement of his business. Something drastic will require to be done at an early date to discourage the idea that commercial buildings are only signboards by day and backgrounds for twinkling electric lamps by night. The advertisement curse is so great that a strong society has devoted all its efforts to try to restrain the advertiser to act within limits that will not outrage artistic taste and will leave our cities and country sufficient attractions to make it possible for us to live there.

In the domain of ecclesiastical architecture, the Nonconformist bodies perhaps represent the bulk of the people; and, so far, the monetary standard seems to be the chief one applied to our art. The Catholics appear to me to be the body having the strongest belief that the artistic and the religious instincts are closely allied, and I am more often pleased to see their churches begun on lines that are noble or majestic, in the hope that some day the heart of the people will be moved to complete them in grandeur and dignity, rather than view many of the churches and chapels completed at a minimum cost per sitting, and whose every detail speaks of the commercial spirit. My sympathy goes out to the man or body of men who vow to rear a great and worthy church in thanksgiving for some good gift; but I cannot for the life of me understand the desire of people to erect in their vicinity some structure which outrages all taste, merely for the sake of having a place of worship convenient to their doors.

In the matter of municipal architecture we must all regret the growing tendency to place many of those works in the hands of the official surveyor. It is difficult to credit the business men, who usually form the bulk of these Councils, with so little knowledge of the ordinary demands of architectural design, as is evidenced by their placing such works in the already fully employed hands of their hard-worked servants. In any large town, a borough surveyor has, as a rule, such an amount of work in the matter of laying out of new streets, the examination of building schemes, the enforcement of the building by-laws, the sewerage carriage and disposal, the street cleansing and upkeep, and the constant personal attendance on committees, as would make many an energetic and active man quake with fear. I envy them their courage and honour their industriousness; but the very nature of their calling must render it impossible for them to get that quietude, or cultivate that temperament without which architectural design is impossible.

In the minds of the ordinary Councillors a plan is just a plan, and an elevation is only an elevation, and good and bad are equally mysterious to them; but they have a very strong opinion that they can save expense in fees by their method of procedure, and that seems its only justification. Occasionally there are projects so important that they feel some necessity to employ the best talent they can find, and we as a body may be glad that at these times they have come to us for guidance and help. While we have found that these public authorities are often amenable to our guidance in the architectural aspect of their schemes—and for this small mercy we may be thankful—yet in the inception and governing principles of their projects they still prefer their own sweet way.

As an instance of what I mean in this respect, I may say that for a good many years the London County Council have had under consideration the question of building a county hall. This body has a reputation for business-like qualities above all else, and naturally considers the financial aspect of its schemes very closely. Among the sites considered some years back was one on the south side of Trafalgar Square, and formerly part of Spring Gardens; and it was suggested by some Councillors that, by covering this site with shops and placing the county hall over them, sufficient revenue would be obtained to pay the ground rent. Picture a county hall, for a body that is probably only second in importance to Parliament, representing some four and half millions of people, housed over a collection of bootmakers' and butchers' shops, and tell me if our shopkeeping instincts could any further go.

The greatest architectural scheme the same public body has yet instituted is the new street from Holborn to the Strand. The main lines of this street are those urged upon the County Council by the Royal Institute of British Architects, and they are far in advance of any other scheme prepared without the aid of the Institute. It probably required a good deal of tact and diplomacy to get the Council to accept the guidance of the Institute in this matter, and yet one would have thought that the success with which the scheme has been everywhere acclaimed would have proved a strong inducement for the Council to accept the guidance of the Institute in the designing of the architecture of the new street. Instead of this being the case, we find the County Council instituting a competition for designs for street frontages, the motives governing these being as nebulous and hazy as the sun in a fog, while the conditions were such as lowered the architects taking part to the level of second-rate clerks. The competition was foredoomed to failure, and a most complete fiasco it turned out in the end.

If the County Council had possessed the courage to appoint the then President of the Institute to guide, advise, and control the whole scheme for the procuring of designs, I am confident we would have obtained some worthy result; instead of which we now find the street turned over to the tender mercies of the financial and speculating architect, whose exploits as a class are already painfully evident in Shaftesbury Avenue and elsewhere. The representatives of the people are content that the land should be covered by buildings that will assure the payment of the ground rents, and this payment evidently carries with it a right to built almost any kind of structure which has a "stone front." It does not seem to have dawned upon these Councillors that this street will have an artistic influence on future generations for good or evil, and that some serious attempt should have been made to turn it into an influence for good.

In the matter of selling and letting land, and the development of building estates, the claims of architecture are either not recognised at all, or only as a sort of makeweight of no real value, and yet I have a conviction that the shrewd landowner who avails himself of the services of the best and cleverest architects will reap a not unmerited reward in the shape of better houses, better tenants, and increased purchasers. The miles and miles of drearily dull or vulgar cottages and dwellings surrounding almost all large towns are often entirely innocent of the services of any architect, and this is largely because of the idea of the people that architecture means expense, ornament, useless show. When we architects know that the homely cottages and smaller town houses built in the seventeenth and eighteenth centuries were entirely quiet and satisfying buildings, usually with a minimum of ornament or expensive detail, we should use every endeavour to let the people know that this idea of theirs is a wrong one, and that we also can design a home that will not cost more than the wonderful buildings they now inhabit, with their carved fern cups, incised curly scrolled lintels, their splotches of gravel, rough cast and imitation half-timber work, executed in cement.

I would just lightly touch on the relation of the people to our profession, and in reading the lives of the old masters in architecture one can hardly fail to notice how greatly they were respected and often loved by their fellow-citizens. The feelings which no doubt their talents and uprightness of character inspired in those days have remained to us as one of our best legacies, and no architect of honest purpose and calling will fail to hand them down untarnished to his successors.

As a body of professional men, I think we may hold it as one of our jewels that we have the confidence of those who entrust us with their work and also of those whom we employ to carry out our designs. The people, I think, have ever been ready to believe that our actions are impartial and inspired by fair-mindedness to both parties with whom our relations are so intimate; and I trust that this feeling will grow yet stronger in the years that are to come. I do not think that there is anything which is more likely to foster this spirit in our ranks than that of meeting together on such occasions as these and expressing our views to each other on the thousand and one details of the practice that go to make up the sum of our lives.

The relation of the people to our art is something that vitally concerns us; a spirit of indifference to it is worst of all, and likely to be most harmful to us and our work. Appreciation of our efforts will spur us on to further endeavours, will develop our powers and give us confidence and strength.

All erroneous conceptions of our art must be combated, and its aims clearly set before the people; for this reason I think we, as a body, should endeavour to be much more in evidence in a public sense, that we should use every legitimate means in our power to interest the public in our work. We should drop as much as possible the technicalities of our profession and infuse human feeling into our description of our buildings; we should drop all stock phrases of thirteenth century Gothic or Greek and Roman classic in our efforts to get at the mind of the people, and rely on that broad basis of human needs which lies at the root of all buildings, which is, in fact, the reason of their existence. We can no more throw away our knowledge of styles or be independent of the influence of the great architecture of the past than the poet can throw away his vocabulary or be independent of the priceless literature which is our great inheritance. Only, in our intercourse with the public, do not let us express ourselves in the archaic language of Chaucer; let us deal with twentieth century work in a twentieth century manner, and we may then hope to enlist the sympathy and co-operation of the great mass of the people.

The danger of isolation or retirement is estrangement from the spirit of the time, and we and our work are at present suffering grievously by reason of our isolation, our work is misjudged or erroneously valued through ignorance of our aims and ideals; false conceptions of the scope of our work have risen up in the minds of many round us, and it is incumbent on us and due to our work to put ourselves right in this matter. Enthusiasm is the spirit which will carry us on and compel others to take an interest in our endeavours—enthusiasm in the face of discouragement and repression. Let men see that there must be something behind the inanimate stone, and brick, and iron, that inspires us with pleasure and satisfies some craving of our nature, and perhaps they also will find a hunger of the mind that must be appeased, will awaken to a sense of the need for beauty in our buildings for all purposes.

A PUGIN STUDENT'S TOUR IN THE COTSWOLDS.

By C. Wontner Smith [*A.*], *Pugin Student* 1902.

WHEN the Council honoured me with the award of the Pugin Studentship last year, and choice of a district to travel in had to be made, I found it a matter of no little difficulty to fix upon a region likely to afford material for the special studies I had engaged to pursue, and at the same time one that had not already been well traversed by former Pugin Students.* At length, on excellent advice, I chose Gloucestershire and the counties immediately surrounding it—a delightful district, which cannot be better described, I think, than as the Cotswold country.

Leaving London on Saturday, 6th July, I made Burford, in Oxfordshire, my first stopping-place. This is the beginning of one portion of the Cotswold district, which stretches from Broadway to Bath, and from Birdlip to Burford, covering about three hundred square miles of undulating hill country intersected by numerous narrow valleys. The highest point of the range is more than eleven hundred feet, but the average altitude would not exceed half that height. It is essentially a stone district, and all the houses are built of local limestone, which lies everywhere within a few inches of the surface.

In bygone times this was the great wool-producing centre. The wool-staplers, owing to the great demand for the Cotswold wool, were a very wealthy class, and the fine manor-houses and churches which are so plentiful in the district are chiefly the outcome of their munificence.

The finest churches were built towards the latter end of the fifteenth century, the most notable perhaps being Northleach, Campden, Cirencester, and Winchcombe. The first thing which strikes one is the solidity and general simplicity of the work; but the more one studies it, the more one appreciates the beautiful proportions of the buildings. The towers are very striking, and, rising to a great height, they seem almost to dwarf the church by their loftiness; but this effect is partly due to the extreme shortness of the naves, a peculiar feature of the district. They are, nevertheless, elegant and graceful in outline. The lower portions are usually plain, with buttresses at the angles, and perhaps small windows in the lower stages. The richness, however, is reserved for the upper portions. The belfry windows usually have traceried heads, and the wall surfaces between, and generally all round the belfry stage, are panelled. Sometimes this treatment is carried down the lower portions, giving an exceedingly rich appearance. The most notable examples are the towers at Evesham and Cirencester. The parapets are often pierced and embattled, and at the corners are pinnacles with crocketed finials. Spires are quite the exception; Burford, I think, is the only church of any note that I saw with one. There are several examples of truncated spires, however. Minchinhampton has a good specimen, and there is one in Gloucester.

The Cotswold builders clearly knew the value of concentration of ornament, for by leaving the lower wall-surfaces comparatively plain the richness of the upper stories is the more emphasised. The naves are in some cases quite short and look out of proportion, especially when compared with the height of the tower. This is due to the narrowness of the bays. Another feature, I think, peculiar to the district is the east clerestory windows. When filled with stained glass they look very well, but in some instances they have a decidedly weak appearance. On plan the nave piers are generally octagonal, the sides being slightly concave, and the capital is widened on the sides from which the arch springs, giving the effect of a small corbel.

Perhaps the chief charm of the district lies in the domestic work. The type of architecture is peculiar, and though perhaps it does not compare in size and grandeur with some of the fine houses in other parts of the country, yet it is full of interest, and above all is in excellent taste. We do not find much domestic work earlier than the sixteenth century, and it continued in the same style right through the seventeenth century with hardly any appreciable alteration. This is probably owing to the isolation of these small towns and villages, cut off as they are from the main highways of traffic. The uniformity of treatment, however, tends to make the work interesting, and though there is often a great sameness in individual features, it never becomes monotonous. From the stately manor-house down to the humblest cottage, admirable taste and originality are displayed. The houses are all built of stone, which lies ready to hand; and though as you go farther north you find examples of half-timber work, stone is the material on which the builders relied; and they knew how to use it and how to get the best effect from its use. The houses are invariably planned one room deep, so that they can be roofed with a single span. The smaller ones are generally oblong, with a gable at each end. If more accommodation were required a wing was added, and this treatment was always carried out, the houses being enlarged by the addition of wings; but the single span roof was always adopted.

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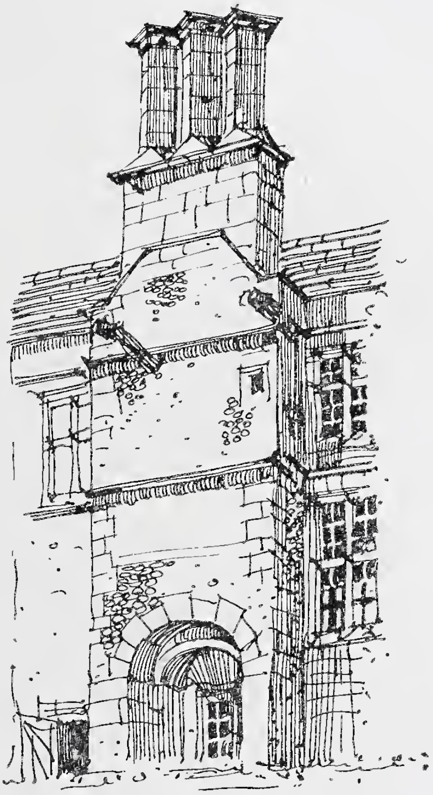
* The Pugin Student is required to make a tour of not less than eight weeks' duration for the purpose of studying mediæval architecture in this country (including buildings designed on mediæval principles down to the end of the sixteenth century), and to furnish the Council with a Paper descriptive of his tour, with sketches, measured drawings, &c. Mr. Wontner Smith's Paper has had to be considerably abridged for the purposes of its present publication; the original, however, is in the Library, where it may be read in its integrity. The illustrations are reproduced from sketches done during the tour.—Ed.

The gables, which are high-pitched at an angle of about 55°, are a distinct feature of the style; a hipped roof is practically unknown. The picturesque appearance of the old houses is greatly enhanced by the stone slated roofs which in course of time weather to a beautiful colour. The slates are small, are hung to the battens with pegs, and are generally torched on the under side. They form a most durable roof covering; there are many instances of roofs two or three hundred years old which are almost as good as when first laid. The cresting is usually stone, with a simple roll moulding on top.

The houses are generally of two stories, with perhaps some small rooms in the roof, and the number of windows diminish as they ascend. Thus one finds a four-light window on the ground floor, a three-light on the first floor, and a two-light in the roof, and sometimes a double treatment. The windows have stone mullions either with a plain chamfer or with a hollow or ovolo moulding, and set on the face of the wall. In the case of larger windows the central mullion is thicker with an additional moulding. The sills are sloped inside and out, and do not project from the face of the wall. Over the windows is a hood-mould about 6 inches deep: this feature is invariably employed, being similar to that found in Perpendicular work. It is formed on a right angle hollowed on the lower side, the upper fillet being generally slightly thicker than the lower. Sometimes the moulding runs right across the head of the window in the form of a string. In earlier work examples of leaded lights in diamond panes are to be found, but the general method is square glazing.

The walls are thick and built of solid masonry, the quoins and dressings to the doors and windows being ashlar work, and the general walling random rubble. The doorways, especially in the smaller houses, are quite simple, with moulded jambs, which usually take the form of a double ovolo. The outer one runs up and returns square along the top of the door, and the inner one forms a flat arch. The chimneys are an interesting feature. The lower portions generally project square from the face of the wall on the outside, giving the appearance of deeply recessed fireplaces, and windows are sometimes cleverly introduced, set far back in the wall, the stack arching over them. Above the roof the flues are generally built separately, and set either square or diagonally, rising off a deep weathering, and finished with a moulded cap, generally a simple ogee in section, but sometimes more richly moulded. The gables are high-pitched, with a moulded coping or flat weathering, and are usually finished with a small stone finial.


A TYPICAL COTSWOLD CHIMNEY STACK.

Owing probably to the difficulty of procuring lead in such out-of-the-way places, the builders managed without it. They were of course helped to a great extent by the construction of their roofs, which are invariably in one span. Even in the valleys no lead is used, but the slates are laid on in a continuous sweep, the courses being carried round even.

There is a marked absence of carving and ornamentation in the Cotswold houses, the builders relying on the proportion and general grouping of their buildings to produce a picturesque effect. This is particularly noticeable in the earlier work. There are examples of carving, such as the coats of arms on the old market hall and almshouses at Campden; but they are rare. The keynote of the whole style is simplicity, and although there is a great sameness and repetition in individual features, much variation was obtained by different combinations of the same forms, thus lending to each building a distinct and separate interest, clearly showing the underlying feeling of true proportion and good taste which these Cotswold architects possessed.

Burford, which is five miles from the nearest station, is a typical Cotswold village, retaining much of its mediæval character. In the old coaching days it was the centre of a thriving district and at the height of its prosperity, but with the introduction of railways the source of its popularity and wealth passed away, and it has gradually lapsed into a quiet and rather sleepy country village. It still, however, retains evidences of its former importance, and is full of interest to the architect.

The church, dedicated to St. John the Baptist, is principally of the Perpendicular period, but has remains of Early English and Norman work. The south porch, perhaps the most distinguishing feature, is a rich example of the Perpendicular style. It is beautifully proportioned, and on the exterior is richly panelled and surmounted by crocketed finials; the niches over the doorway contain the remains of two good figures. The interior is divided into two bays, and has a fine fan-traceried vault. The lower portion of the tower is Norman, and was probably erected about 1150, the first stage above the roof being of the same period. In this the recesses and openings are ornamented with the typical Norman zig-zag. The top stage is Perpendicular, as is also the spire. These later additions to the Norman work considerably affected the stability of the tower, and it was found necessary in the fifteenth century to strengthen the walls inside the church. The Early English work is chiefly confined to the chancel, but there are also some remains in the south aisle. The rest of the church is fifteenth-century work, including the nave, clerestory, and aisles. The nave is 70 feet long and 23 feet wide, and divided into five bays.

I must not omit mention of the Priory, a building of great historical interest, built by Speaker Lenthall in the days of the Commonwealth. It is now little more than a ruin, but clear indications of its former magnificence still remain. One of these is the beautiful private chapel at one end of the house, approached by means of a balcony leading from the first floor into a sort of private gallery. It is Jacobean in character. Practically the outer walls are all that remain of the house, for the interior has fallen into decay with age and neglect. The old ballroom, however, can be seen, with its beautifully modelled plaster ceiling, supposed to be one of the best examples existing of that kind of work.

The place is full of fine old houses and quaint cottages: the old toll-house, or "Tolsey," as it is called, and the almshouses built by the great Earl of Warwick being perhaps the most interesting.

Not far from Burford, on the Lechlade road, is a group of churches of early origin. That at Broughton is the smallest and undoubtedly the oldest. It is quite small, consisting only of a nave and chancel and small south porch. Portions of this church are evidently Saxon, the chancel giving the clearest indication of this character. The east end is quite plain, without buttresses, and has a small two-light window high up in the wall, of Saxon type; and the angles of the wall have the long and short work, a distinguishing feature of the period.

Langford Church, about two miles away, has many points worthy of notice. It is chiefly Transitional in character, the chancel being Early English. The tower, which is central, is undoubtedly the oldest part of the church, for the detail is crude and almost clumsy, this being especially noticeable in the interior. The staircase turret is rather interesting. Placed on the north side it projects from the tower with splayed sides in which small windows are inserted. The west end is Early English, and has two strange buttresses or rather pinnacles rising up on either side of the gable end. They are square at the base and up as far as the parapet, but above the roof level they terminate in circular shafts about three feet in diameter with a conical top and moulded finial. The nave is Transitional, the columns having beautiful carved caps with various forms of stiff leaf foliage, showing great originality in treatment. The chancel is Early English, but has suffered somewhat from restoration. The south porch is of early date, and has a rudely carved crucifix let into the wall on the east side, and a representation of the Crucifixion over the entrance.

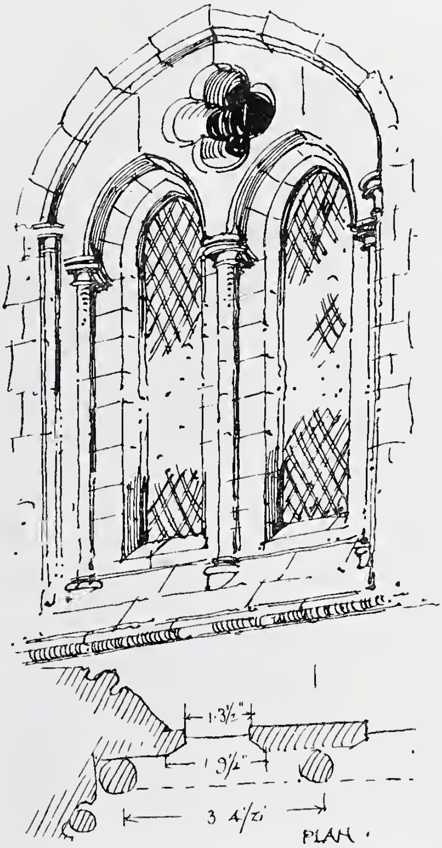
At Shipton-under-Wychwood is the beautiful old manor-house, Shipton Court, erected about the year 1603 by the De Lacey family, the founders of Kirkstall Abbey. It is a typical example of the larger houses of the district, with its high-pitched gabled roofs covered with stone slates. The work is simple, but an indescribable charm is given to it by the way in which the various parts are grouped. It is now undergoing extensive restoration.

North Leach, about nine miles from Burford, has one of the finest churches in the district. It consists of a nave of five bays, chancel, north and south aisles, south porch, and tower at the west end. The church is principally of fifteenth-century work, but the tower and the south porch probably belonged to an earlier church, and are Late Decorated or Early Perpendicular in character. As in Burford Church, the porch is the most striking feature, being 18 feet 8 inches across at the top and 40 feet to the parapet [see Plate I.]. The work is very ornate but refined, and exhibits the best feeling of the period. The entrance doorway has a pointed arch, and the crocketed hood-mould runs up into a niche in which is a seated figure, Above this, again, is another niche, also containing a figure, surmounted by a rich traceried canopy. The porch has a parvise over, and the builders overcame the difficulty of providing a flue to the fireplace by making it run up inside one of the buttresses, with an outlet in the top of the pinnacle. The parvise is lighted with small square-headed windows with reticulated tracery. Another interesting and somewhat novel feature is the small bell turret over the central entrance. The church contains the remains of an old stone reredos, a stone pulpit, and several interesting brasses. The latter are mostly memorials of wealthy woolstaplers, by whose aid no doubt the church was erected; the figures are represented with one foot on a sheep and the other on the woolsack. The tower rises to a great height, the lower portion quite plain, but the upper stories richly panelled, and with small window openings pierced in them.

A small church close to Burford, called Swinbrooke, has the remains of some Norman work. In the chancel are some curious old oak seats with carved ends, and some fine monuments to the Fettiplace family. The west front of the tower is recessed to a height of about 30 feet.

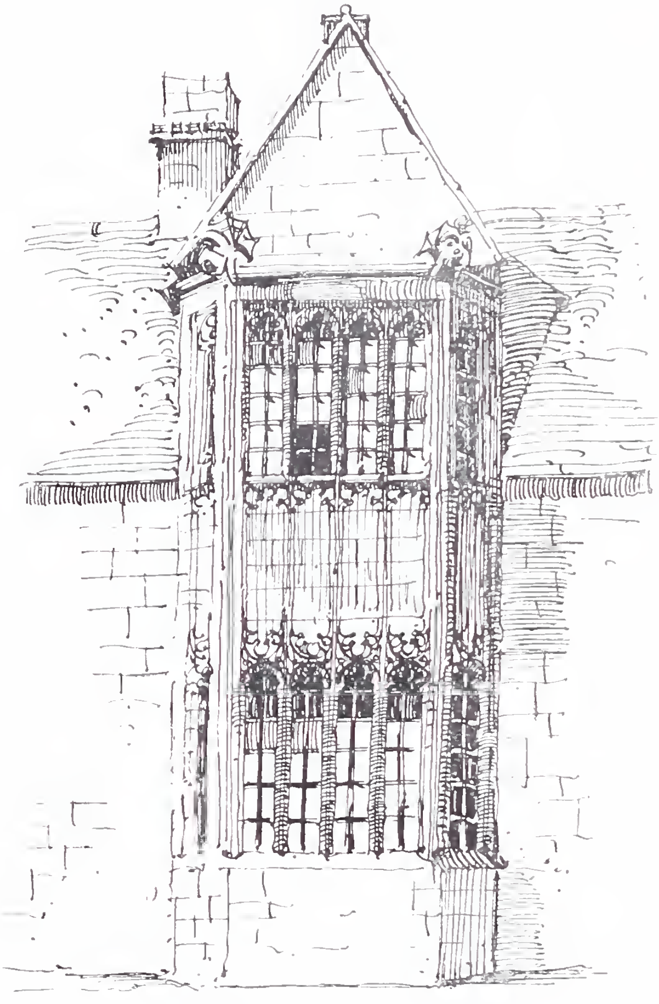
After a five days' stay at Burford, I went on to Stow-in-the-Wold, a long and straggling town about six miles to the north. It is situated on a high hill and commands an extensive view of the surrounding country. The church exhibits work of all the styles. The nave is late Early English, and divided into four bays by clustered columns; on the north side the piers have eight clustered shafts, and on the south four and of later date, with moulded capitals and plain chamfered arches. The north and south aisles and the north porch are also in the late Early English style, the windows on the north side being admirable examples of coupled lancets, with a quatrefoil in the tympanum. On the exterior the lancets are recessed between columns, the quatrefoil being pierced through the thicker part of the wall above, and the whole comprised under a single arch without any hood-mould. The north porch contains a small richly moulded window, quatrefoil in shape and very deeply recessed on the inside. The west window of the nave is an extremely beautiful example of the Geometrical period. It is a five-light window, and on the exterior the hood-mould is carried up into a niche in the gable end. The chancel and south aisle are Decorated in style, and the tower, which stands on the south side of the church and opposite the north transept, is Perpendicular, as is also the nave clerestory. The tower is rather plain, especially the lower portion, but has a richly panelled parapet. The east window in the chancel is modern, and was, I think, the work of Mr. Pearson when the church underwent restoration a few years back.

The church is interesting from the fact of its showing in a marked degree the gradual development of window tracery. In the north transept is the simple Early English lancet. The next step is seen in the window of which a sketch is given—two lancet windows under one comprising the arch with the tympanum pierced. Proceeding to the south aisle we find a good example of the Early Decorated window with plate tracery—a small two-light window with lancet-shaped lights, with a quatrefoil in the head, and then the splendid Geometrical window in the west end. The restored east window is an example of the later Decorated or Flowing tracery, and in the aisles we find Perpendicular and also Jacobean windows.



WINDOW IN NORTH AISLE, STOW-IN-THE-WOLD CHURCH.

There are some excellent examples of domestic work in the vicinity of Stow-on-the-Wold. The manor house at Upper Slaughter, now used as a farm, contains all the characteristics of the larger houses of the district. It is built on the L plan. The gable treatment of the two principal fronts is very successful, but the back portion is more picturesque. Several of the windows have been built up, probably during the time of the window tax. The kitchen, which has a vaulted stone roof, is supposed at one time to have been used as a chapel.



BAY WINDOW, FROM THE PRESBYTERY, CAMPDEN.

In the same neighbourhood is the manor house of Upper Swell, of somewhat later date; though quite small it was no doubt of some importance. The detail is more refined and the work is richer than the house at Slaughter. The stone porch, which is Elizabethan in character, stands forward from the main part of the house, and has a small room over it with a gabled roof. On either side of the doorway are two columns supporting a semicircular pediment in which is a shield, and the frieze is enriched with strap ornament. Inside the house is some most interesting work. On the ground floor the principal room is panelled in oak, with carved pilasters and cornice. On the first floor there is a large room containing a beautiful fire-place and overmantel, Elizabethan work, over 9 feet high, and 6 feet 4 inches across. It is made of stone and takes the form of a projecting hood carried on brackets. The frieze is ornamented with oblong shields in which are marble panels, and the hearth is composed of black and white squares of the same material slightly raised from the floor. Unfortunately, on the tenant—who is a farmer—requesting the landlord to do some repairs the latter sent down a man who gave it a coat of cream paint! The room has a beautiful modelled plaster ceiling divided by means of flat bands of ornament into squares of about 10 feet. In the centre of these squares is a shield, and in the corners a *fleur-de-lis* or other small piece of enrichment. The frieze, about 18 feet deep and modelled in high relief, is composed of a series of winged figures. There is an exactly similar frieze in Chastleton House, some five miles away, which was erected about the same time.

My next stopping-place, Moreton-in-the-Marsh, about four miles north, is not a very interesting town, but there are one or two places near well worth a visit. Chastleton House, some three miles away, is a beautiful Elizabethan mansion which was commenced in the year 1603. It is a remarkably fine example of the period, and especially interesting from the fact of its being a complete specimen of the style, never having been altered or added to since its erection. Some portions in the upper stories have never been finished to this day, and it is interesting to see the stone walls with the plastering and panelling incomplete, just as they were left three centuries ago. The house consists of two stories, with attics in the roof, and has an extended frontage with a staircase tower at each end. The interior is a perfect treasure-house of beautiful tapestries, paintings, china, and other works of art. In the hall is a very fine carved wood screen.

Chipping Campden is an old market town situated between two ridges of the Cotswold Hills. It was anciently known as Campdene, and dates back to early Saxon times. The first detailed notice of Campden is in the Domesday Book, when it was evidently a place of some importance. The town attained its greatest prosperity in the fourteenth and fifteenth centuries, when it became the principal market for wool, which was exported to Flanders. Many rich wool merchants resided here, and much of the architectural beauty of the place at the present day can be traced to that period. It is quite a mediæval town, and, like Burford, retains all its old-world aspect owing to its isolation amongst the hills. It contains many architectural features of interest, the fine old stone house known as The Presbytery being one example. It has a bay window with traceried lights, and gargoyles at the angles.

The church is Late Perpendicular in style throughout, and consists of nave with five bays, aisles, north and south chapels, chancel, and west tower. The latter is 120 feet high from the base to the parapet, and seems somewhat out of proportion to the nave, which is short. The principal features in the tower are the long thin buttresses, which run right up to the parapet. There are three on each face, dividing it up into compartments, of which the two middle ones are wide and the side ones narrow. The tower is divided into four stages, the lowest one plain on two sides; but on the west there is a large traceried window with a small doorway underneath. In order to preserve the Perpendicular treatment the middle buttress is carried down across the window, but quite detached from it, with the exception of a small arch about half-way down butting on to the tracery at the middle transom. The doorway beneath is deeply recessed, the buttresses dividing over the head and continuing down on either side. The upper stages are panelled, and the top one has two three-light windows on each face, the two side lights filled with louvres. At the parapet, which is pierced and embattled, the buttresses are arched over and terminate in pinnacles above the parapet. The angle buttresses are also carried up and treated in a similar way. The whole treatment is quite unusual, but is dignified and in good proportion. The south chapel contains monuments of the Hickes and Noel families, and in the chancel are two fine brasses to the memory of William Greville and his wife. The lectern is dated 1618.

Near the church are the remains of a mansion built early in the seventeenth century by Sir Baptist Hickes, first Viscount Campden, but it was unfortunately burnt down purposely by its owner during the Civil Wars, that it might not be garrisoned by the Parliamentary forces. All that now remains are the east and west pavilions and a small portion—quite a ruin—of the main building and the entrance gates.

Sir Baptist Hickes built the almshouses close to the church (date 1612), to accommodate twelve poor people, and also the old Market Hall, one of the few now remaining, which stands in the main street of the town. It has an open timber roof, and considering its age is in a splendid state of preservation. The hall is no longer used for the purpose for which it was built, but forms an excellent covered playground for the children, who besiege it in wet weather. It is open on all sides, and is two bays wide and five bays long, divided down the centre by a row of columns.

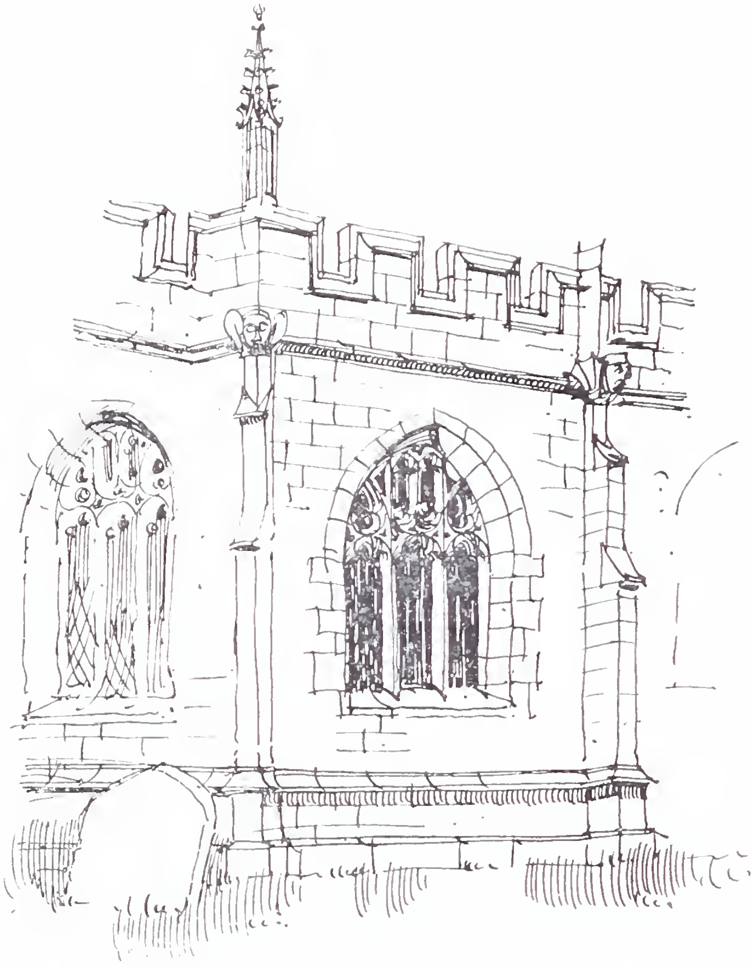
The town is full of quaint old houses, and many of the shops and inns still retain their old signs set in frames of hammered metal work. There are also sundials in great variety and old lead rain-water heads to be seen, and many other features dear to the heart of the architectural student.

The villages in this district are particularly picturesque, for we are here close to Worcestershire, where timber is much used constructively, and we are not surprised to find the introduction of timber as a substitute for stone. Several of the houses are built of stone up to the first floor level, and above that half-timber work is used, but we still find the stone slated roofs and high-pitched gables. At Lower Quinton there is a house built entirely of timber with the exception of a small stone plinth.

After leaving Campden I proceeded to Evesham, situated on the river Avon. The town, with the exception of the churches and the remains of the old abbey, is not very attractive from an architectural point of view. There are, curiously, two churches, built in the fifteenth century, standing close together in the same churchyard, and also an isolated bell-tower standing due east of the smaller church. Both churches are good examples of Perpendicular work, and are built much on the same lines, both containing on the south side small chapels with beautiful fan-traceried roofs with pendants delicately carved. The smaller church, in which I made a sketch of the baptistery [see Plate II.], was practically a ruin for a hundred years—from 1730 to 1830. The roof had fallen in, and grass grew in the nave and aisles to the height of about two feet. The old verger remembers the time when it was a playground for the boys of Evesham. Fortunately the beautiful roof over the baptistery was preserved from much harm, and stands to-day almost intact. Close by the church are the remains of the old Norman gateway; the original ground level must formerly have been considerably lower than it is now, for the columns under the archway are sunk some way in the ground, and you have to go down several steps into the church. The isolated tower, which is Late Perpendicular in style, is richly panelled all the way up, and much resembles the tower to the church at Cirencester, only it is not so lofty. Portions of the old refectory belonging to the abbey still remain, and there are one or two timber houses close to the churchyard which give one a very good idea of what Evesham must have been in the fifteenth century.

About six miles from the town and also situated on the river Avon is Pershore, with its remains of the well-known Abbey bearing that name. This is, of course, too well known to need description.

At Winchcombe, twelve miles south-west of Evesham, there is a fine fifteenth-century church and a complete example of the style, comprising nave, aisles and chancel, and tower at the west end. The nave consists of eight bays, the last two on either side nearest the chancel screened off to form chapels. There is no chancel arch. The church was built by the monks of the abbey at Winchcombe, of which there are a few remains east of the chancel. The nave aisle windows are simple three-light windows with traceried heads; there is no hood-mould on the exterior, which has resulted in the decay of the stonework due to water running down the tracery. In several churches in the district I noticed the absence of hood-moulds to the windows and have not been able to account for the omission. The tower has a vaulted roof inside, and there are the remains of a carved wood screen in the church.



PORTION OF NORTH AISLE, WINCHCOMBE CHURCH.

Other places visited in the neighbourhood of Evesham were the villages of Sedgeberrow, Fladbury, and Broadway; each has its own distinctive architectural attractions. Unfortunately the weather, which up to this time had been none too bright, began to be extremely wet and cold, and it was no uncommon occurrence to have several days' incessant rain. This was very disappointing, as I was prevented from visiting many places I had made up my mind to see.

Continuing my trip from Evesham, my next stopping-place was Tewkesbury, passing on the way the church at Blockley, with its fine Norman doorway in the south porch. I stayed four days in Tewkesbury. It rained every day, and I saw very little of the surrounding country. The town itself is principally famous for its beautiful old abbey, a most impressive structure, and one of the best remaining examples of early Norman work. This was my first visit to the abbey, and I was greatly impressed by the magnificent effect of the Norman nave, with its lofty columns and vaulted roof. The chancel contains some beautiful tombs, and chantry chapels of both the Decorated and Perpendicular periods. I made a measured drawing of the founder's chapel on the north side, which is Early Perpendicular, erected about the year 1397. It is a very rich piece of work, with delicate tracery and wonderfully slender mullions surmounted by a high cresting. The interior has a beautiful fan-vaulted roof. There are several fine old timber houses in the town, many of them with widely projecting gables, which overhang to such an extent as to make one marvel at the constructive abilities of their builders.

Deerhurst, about three miles distant, is renowned for its church, portions of which are supposed to be of very early origin. I refer to the tower and the west and east ends, which are looked upon as examples of Saxon work. The nave is late Norman, the columns having delicately carved caps. The clerestory is Perpendicular, and in the west window of the south aisle are the remains of some good stained glass, supposed to be fourteenth-century. The font is most ancient, being assigned to the ninth century. In 1884 a small Saxon chapel was discovered about a hundred yards from the church; it had been used as a farm-house, and is still attached on one side to an old cottage.

After leaving Tewkesbury I went through Stroud to a small village called Painswick, about three miles distant. This is one of the many charming Cotswold villages, full of old stone houses with mullioned windows and gabled roofs. The church of St. Mary, a large building in the Perpendicular style, has been a good deal modernised. The churchyard is renowned for its rows of beautiful yew trees, and some excellent monuments, the work of one man, a resident of Painswick, who is himself buried there. They are of seventeenth-century date and exhibit great diversity and originality in design. The man appears to have had a great reputation, as his work is found in several places in the district.

There are some interesting old houses to be seen, the most important of which is known as "The Court House," which Charles I. is said to have made his headquarters. The date over the porch is 1604. It is in the usual style of the Cotswold house, and built entirely of stone. It is planned in the form of the letter H; the Court-room, a large room panelled in oak, with a fine stone fireplace, occupying an entire wing.

About three miles from Stroud is Minchinhampton, with its fine church, or rather the remains of one, for all that is now left of the old fabric are the two transepts and the tower, the nave and chancel being comparatively modern. Of the two transepts the south is by far the finer [Plate III.]. It is a beautiful piece of architecture of the fourteenth century. It was erected in the year 1358 to the memory of a knight named De la Mere and his dame; their effigies lie under the south window in canopied niches. This window, which has five lights and almost entirely fills up the south wall, is a remarkable example of Geometrical tracery, and one of the finest Decorated windows I have seen. The tracery takes the form of the rose pattern, and has only one plane; the mullions are narrow, and the jambs are not moulded but simply splayed. Amongst other unusual features are the stone roof trusses supporting the roof itself, which is composed of thin slabs of stone. These stone trusses are constructed much in the same way as wooden ones. It is stated—with how much truth I cannot say—that when this transept was built the carpenters refused to put up the roof, so that the masons were obliged to do it themselves.

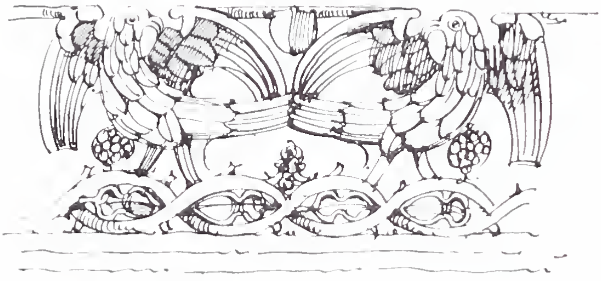
At Minchinhampton there is a quaint old market hall, somewhat of Flemish character. This may be accounted for by the fact that the town was originally of Flemish settlement. It was once renowned for its nunnery, Minchinhampton meaning "a place of the nuns."

Not far from Minchinhampton is Avening, which possesses a very fine old Norman church, now undergoing extensive restoration. It is cruciform on plan, with a central tower, and consists of nave, chancel, north and south transepts, and north aisle. The principal portion of the church is of the late Norman period. The present porch—which I believe it is proposed to remove—is built up against a very fine Late Norman doorway with richly carved caps and shafts. The church contains some remains of Norman carving built into the walls and discovered during the restoration. Where they came from or what was their original use is a matter of conjecture, but they are thought to be part of a font or reredos.

Tetbury, about ten miles from Stroud, contains little of interest but its picturesque old market hall and a few interesting old houses. There is a beautiful old house close by called Chavenage, which, besides its picturesque appearance externally, contains some fine wood panelling, old tapestries, and painted glass. It is built on the plan of the letter H, the entrance being in the centre of the house. The hall, lighted by long mullioned windows, runs up two stories and has a gallery at one end. Oliver Cromwell and General Ireton are said to have stayed here, and visitors are shown the rooms they occupied. The chapel, which stands quite apart from the house, is small and of fourteenth-century date. Some of the windows in the house are interesting, and no doubt formerly belonged to some other building. Over the entrance porch is a small room called "the priest's cell," which has a two-light window with a traceried head, and there are other examples of quite a Gothic type.

Leaving Tetbury, on the Dursley road, you pass Beverstone, with its ruined castle, of which very little now remains, but sufficient to show what a grand old place it once was. The two chapels are in a very fair state of preservation. The larger one on the first floor has a groined roof with moulded ribs, and also contains a piscina and a richly-canopied sedilia. Both these chapels are situated in one of the old towers.

Cirencester, my last stopping-place, is the centre of a splendid district. The parish church is a fine building, principally of the Perpendicular period, but with remains of earlier work, one of the bays of the south chancel aisle being Norman and the chancel Decorated. It consists of nave, north and south aisles, chancel and chancel aisles, south porch, and west tower. The nave and aisles are Perpendicular, the former of six bays. The aisles are unusually wide, and are almost as high as the nave itself, and have clerestory windows as well as the nave. The chancel has a double aisle on the north side, the one nearest the chancel having a beautiful fan-traceried roof. The most interesting portion of the church is the Trinity Chapel, which is situated on the north side, divided from the aisle by a stone screen [Plate IV.]. This is a beautiful piece of Early Perpendicular work, the detail being very rich, especially on the exterior, with its carved and crocketed finials and projecting gargoyles. The north side is entirely filled up with windows divided by buttresses. Some portions of the interior of this chapel have been restored. A specially interesting feature is the fifteenth-century stone pulpit built into one of the nave piers. The wooden screens, though much restored, are very fine examples of late work; the one in the nave has a peculiar cresting composed of birds treated in a conventional manner.



CRESTING ON WOODEN SCREEN, PARISH CHURCH, CIRENCESTER.

A word must be said about the south porch and parish room over, which from the outside looks as though it were part of the church. It was built as a kind of town hall, and has been used as a magistrate's court, though not for many years. It only passed into the hands of the church after a fierce controversy as to its rightful ownership. It is Late Perpendicular in style, and the work is very rich, but is now greatly decayed, especially the upper portions. It contains some interesting woodwork in the shape of panelling and seats of the Elizabethan period. The south porch of the church which forms part of this interesting building has a beautiful fan-vaulted roof.

Fairford, about eight miles from Cirencester, is chiefly famous for the beautiful stained glass in the church. This, of course, is extremely fine and too well known to need description. There are various reports as to its origin. Some say it was the work of Albert Dürer, and was captured at sea from the Flemish. It is also said that the church was built on purpose for the glass, but there is nothing to warrant such a supposition. It is undoubtedly the work of a Flemish artist, and that it has remained in such a perfect condition to this day is accounted for by the fact that at the Reformation it was buried or hidden away and only brought back when all fear of its probable destruction had passed away. The church is chiefly of the Perpendicular style; the lower portion of the tower in the centre of the church is probably earlier. The interior of this tower is especially nice, with its groined roof rising from shafts in the angles. In the choir are some old wooden stalls and misereres and several fine screens. Here, again, the crestings show great originality in treatment, and are well worthy of study.

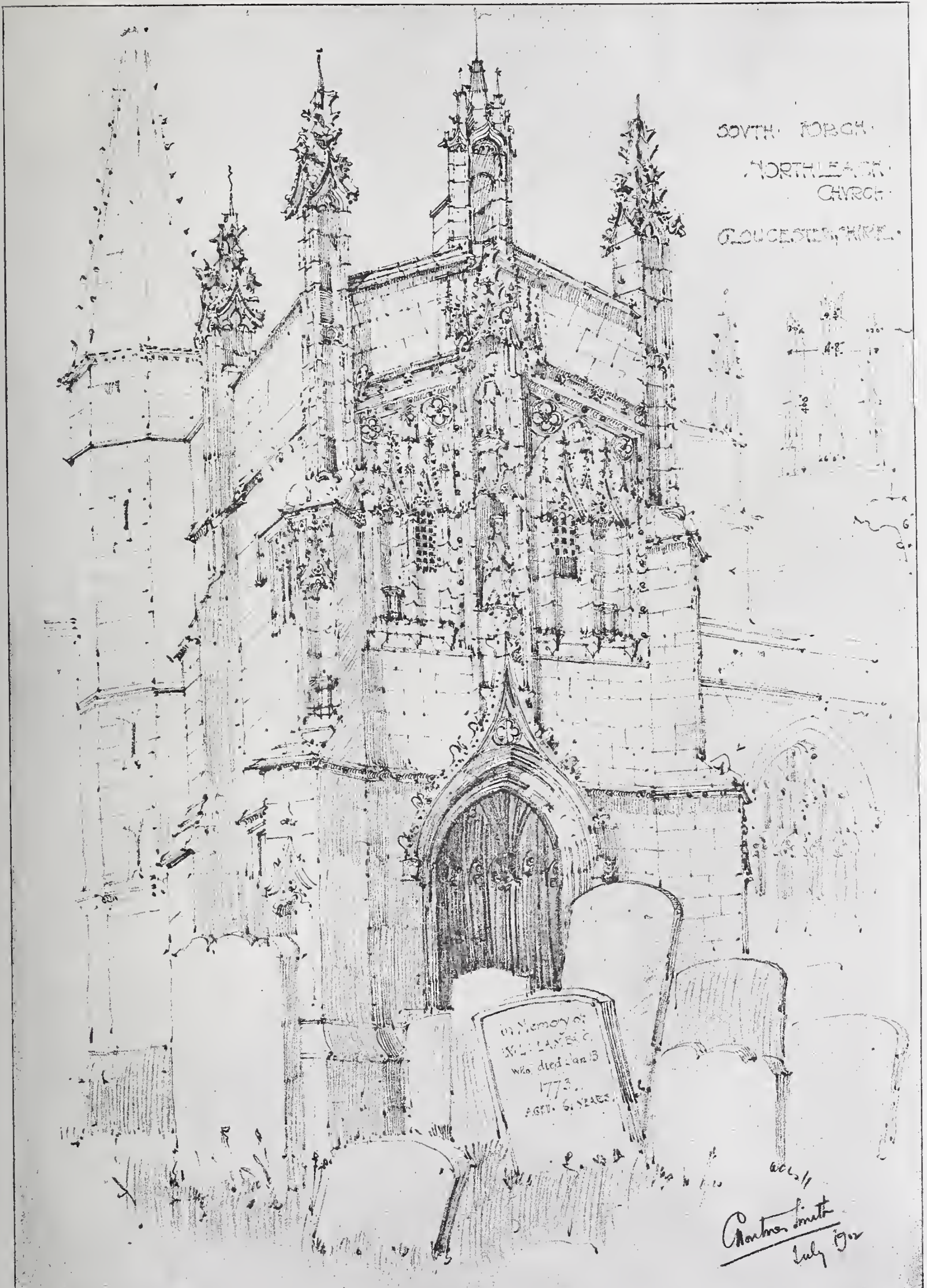
On the Fairford road there is a small hamlet called Maisey Hampton. It has a simple cruciform church of thirteenth-century date, with a beautiful Geometrical window in the east end.

Bibury, a village some seven miles from Cirencester, is a most attractive place. It is situated on the river Colne, a famous trout stream, which winds through the centre of it. The village contains many old houses and picturesque cottages besides the stately manor which bears its name. The church, also, is of considerable interest. It is of Norman foundation; there is a beautiful doorway of that period on the north side in a splendid state of preservation. The north aisle, which has some good windows, is fourteenth-century work. The tower, which is situated at the west end of the north aisle, is very plain, with nothing at all distinctive about it. The south aisle is Early English and the nave Transitional, with carved capitals to the columns. Bibury Court, a charming manor house, is close by the church and on the banks of the Colne. Its date is 1633, but it has been added to considerably at various times, and in consequence is delightfully irregular. At Allington, quite close, is another fine house of about the same date.

Barnsley, in the same district, contains a small church founded in the Norman period, consisting of nave, aisle, chancel, and west tower. The tower is quite unique, having almost the character of domestic work. It is devoid of buttresses, and the parapet on each side is raised in the form of a gable, with a small finial at the apex. There is a considerable batter to the tower all the way up, and the windows are square-headed.

With Cirencester my tour came to an end, and I returned to London at the beginning of September, after an absence of over two months.

A Pugin Student's Tour in the Cotswolds [C. Wontner Smith].



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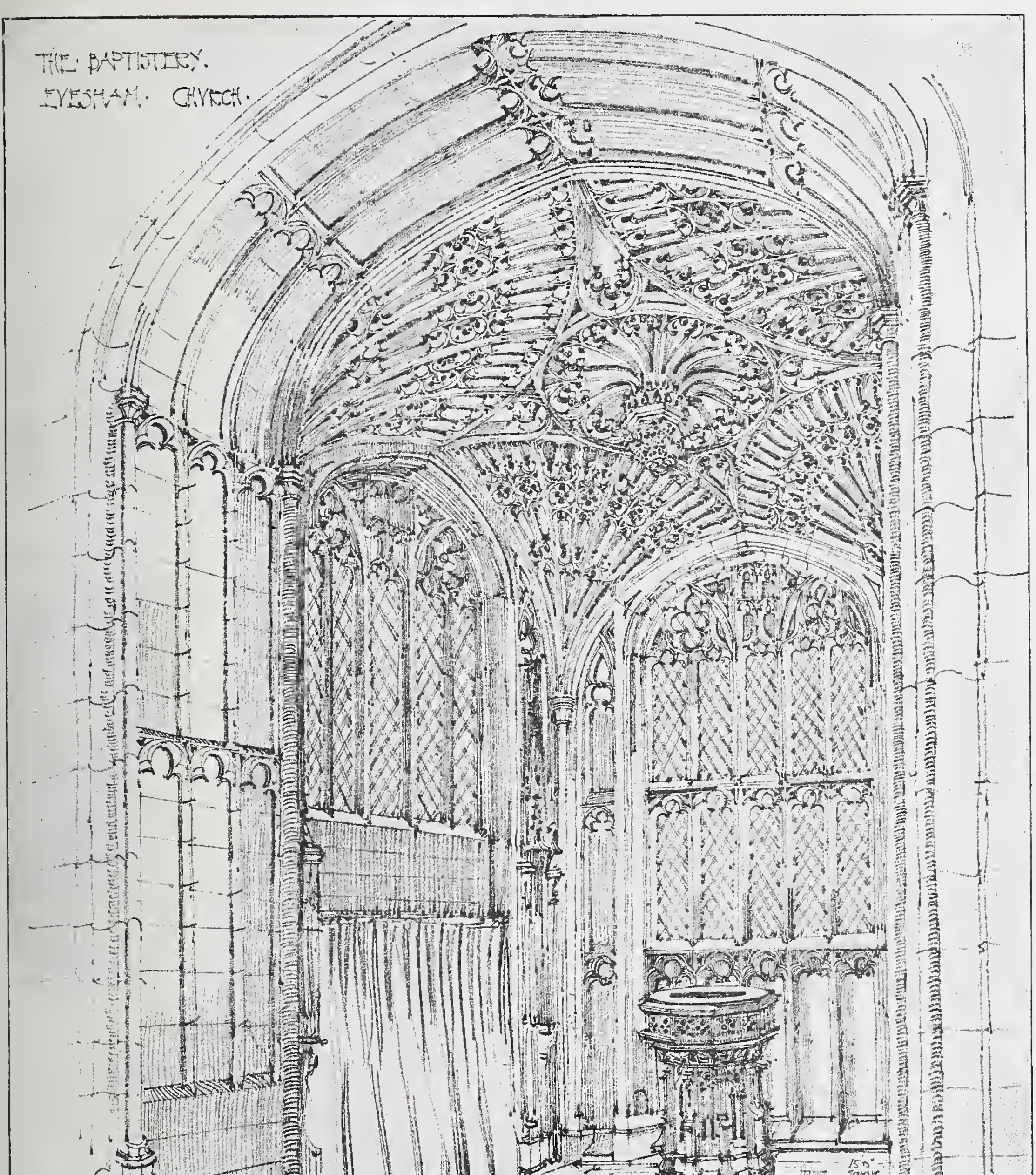
A Pugin Student's Tour in the Cotswolds [C. Wontner Smith].


THE BAPTISTERY.
EVESHAM. CHURCH.
15'0" square.
C. Wontner Smith.

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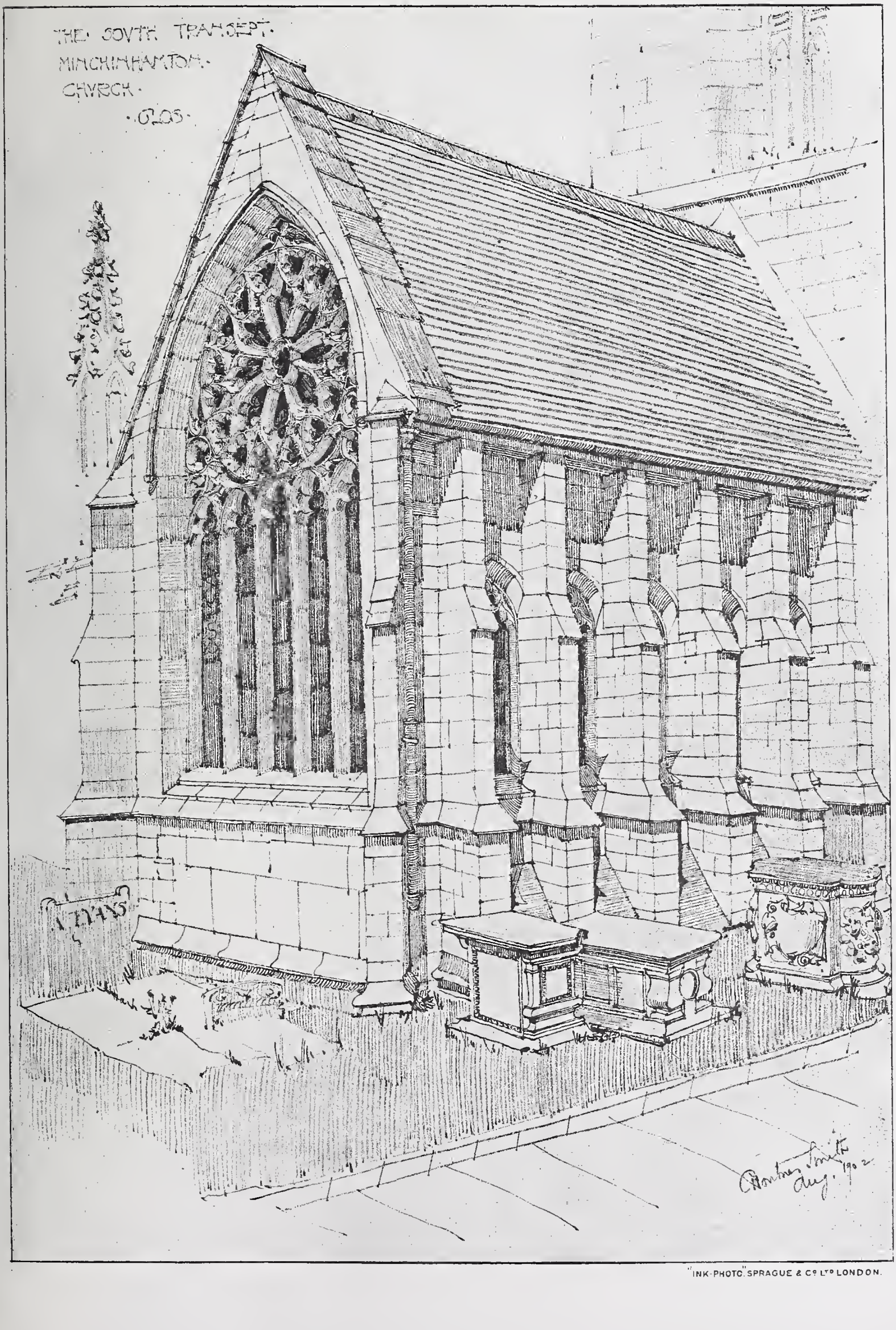

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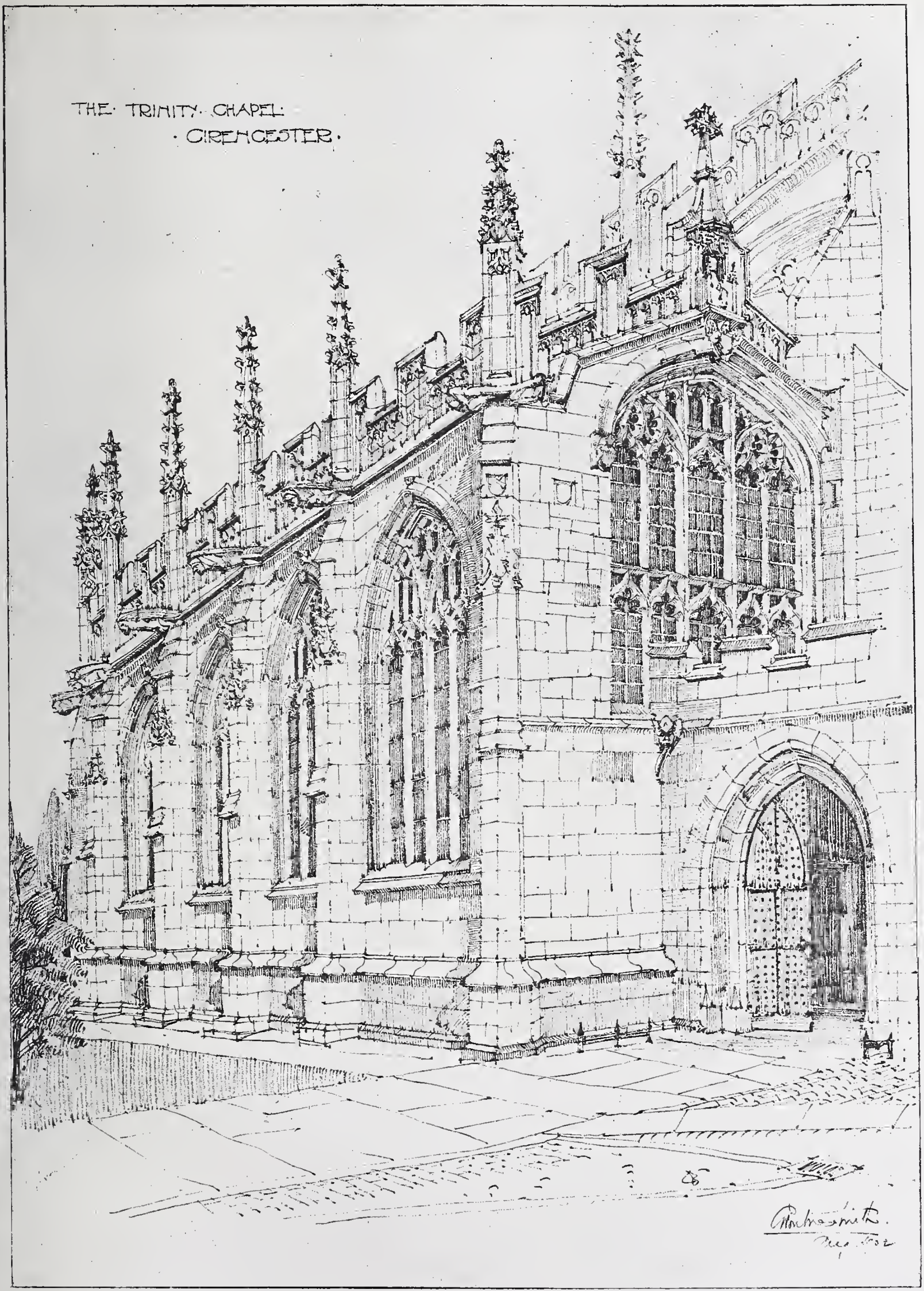

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THE ROYAL INSTITUTE OF BRITISH ARCHITECTS 1834
INCORP. 1837 1887

9, Conduit Street, London, W., *7th March* 1903.

CHRONICLE.

The Royal Gold Medal 1903.

At the Special General Meeting held on the 2nd inst. for the election of the Royal Gold Medallist for the current year, the Council's selection of Mr. Charles F. McKim for the honour was very cordially agreed to. The President, in putting the motion from the Chair, said that Mr. McKim, the distinguished American architect, was probably known by name to all members of the Institute. He was a pupil of M. Honoré Daumet, of Paris, and studied at the École des Beaux-Arts. In 1870 he was elected a member of the Architectural Association of London. He is senior member of the well-known firm of Messrs. McKim, Mead, & White, of New York, and President of the American Institute of Architects. On the table in the Meeting-room lay a number of volumes of *The American Architect* containing illustrations of the works executed by Mr. McKim, either alone or in collaboration with his partners. The following are a few of these buildings :—New York University; Columbia University, New York; Public Library, Boston, which was decorated by Mr. Sargent and Mr. Abbey; The Harvard Union, Harvard University; Medical College, Cornell University; Symphony Club House, New York; Bowery Savings Bank, New York; Washington Arch, New York; Battle Monument, New York; Walker Art Gallery, Brunswick; Sherry's Hotel and Restaurant, New York; The Judson Memorial Church, New York. Anyone looking at the illustrations of these buildings, said the President, would see that Mr. McKim's work was of a very exceptional character and of a very high standard indeed. The Boston Library and the Columbia University Library are described and illustrated in the late Mr. Brydon's Paper on "Public Libraries" [Journal, 25th Feb. 1899]. Of the Boston Library Mr. Brydon says, "The whole of the building is a most careful study of modern Renaissance thoughtfully and lovingly carried out, and reflecting the greatest credit on Mr. McKim, its architect."

The London Building Acts Amendment.

At the conclusion of the ordinary business before the Meeting of the 2nd inst. a discussion took place on the London Building Acts Amendment Bill which it had been understood the London County Council proposed to bring before Parliament during the present Session. In the last week of December a copy of the Bill had been sent to the Institute by the County Council with the intimation that they would be pleased to receive any observations thereon which the Institute desired to make, but that such observations must reach the County Council as early as possible in January 1903. The Council of the Institute placed the matter forthwith in the hands of the Practice Committee, who have since held several meetings on the Bill, both in full Committee and by Sub-Committee. An extension of time in which criticisms of the Bill might be sent in was afterwards agreed to by the County Council. The Practice Committee having reported to the Council the result of their deliberations and submitted a list of amendments affecting nearly every section of the Bill, the Council decided to bring the matter before the General Body at the Meeting of the 2nd inst., and invited Mr. Douglass Mathews, Chairman of the Practice Committee, to give the Meeting an idea of the provisions of the Bill, and also of the amendments proposed by the Practice Committee.

On Monday the 2nd inst. the following announcement appeared in *The Times* :—

> At to-morrow's meeting of the London County Council the Parliamentary Committee will submit a proposal for the abandonment, at any rate for the present Session, of the London Building Acts (Amendment) Bill, to which much opposition has been shown in the City and elsewhere. In their report upon the matter they state that they have given most careful attention to the course to be adopted with regard to the Bill, which has now been read a first time in the House of Commons. Instructions to them to promote the Bill were given by the Council on November 4th last, and time did not permit of their ascertaining the views of the various authorities and bodies concerned before submitting the Bill to the Council for approval. They have not up to the present been furnished with the views of some of the more important technical bodies; but from such observations as they have received and from information that has reached them from various quarters, they regret that they are driven to conclude that the Bill would, if proceeded with in Parliament, encounter very considerable opposition. They are advised that many of the suggestions which have been received would form bases for useful amendments of the Bill in detail, and that had time permitted the Bill might with advantage have been in some particulars differently drafted. It is with regret that they arrive at the conclusions embodied in the recommendations which they submit concerning a measure for the protection of human life and property from the perils of fire; and, in doing so, they are influenced by the knowledge that the Council would, with more time at its disposal, be in a position, if it adopted their recommendations, to place before Parliament in the Session of 1904 a more complete and perfect measure. It is important that any

steps in the direction of withdrawing the Bill should be taken without delay, in order that such authorities and bodies as may wish to take action with regard to the Bill may not be put to any unnecessary expense or trouble. They accordingly recommend:—"(*a*) That, notwithstanding any previous resolution of the Council, a Bill to amend the London Building Acts be promoted in the next Session of Parliament instead of in the present Session, and that the London Building Acts (Amendment) Bill, 1903, be not further proceeded with; (*b*) that the Bill as at present drafted be referred to the Building Act and Parliamentary Committees with a view to their advising the Council, after consultation with such persons and authorities as may be desirable, as to the ultimate form the Bill should assume." From this recommendation Mr. Radford, Chairman of the Parliamentary Committee, dissents, and intends to move an amendment instructing the Committee to proceed with the Bill in the present Session.

At the Meeting of the County Council on the 3rd inst. the proposal to drop the Bill for the present Session and to bring it forward next Session was agreed to, and it was resolved that the Bill, as at present drafted, be referred to the Building Act and Parliamentary Committees with a view to their advising the Council, after consultation with such persons and authorities as may be desirable, as to the ultimate form the Bill should assume.

The President, in opening the discussion at the Institute last Monday, referred to the proposed withdrawal of the Bill, but decided that they should proceed with the discussion already arranged for. Such consideration of the Bill, he said, would not be at all wasted, for there was no doubt that some measure of the kind would be brought forward another time, and it was very desirable that members should be informed as to what was proposed. It was extremely difficult—at least he found it so—to gather from the Bill exactly what was meant. Mr. Douglass Mathews, however, knew all about it, and would explain it and call their attention to some of the alterations which the Practice Committee proposed. Those proposals were still in a liquid state, so that they merely wanted at that meeting to discuss them in a friendly way; they might agree with the Practice Committee, or they might suggest a different view on some of the points. At any rate he hoped that all those who were interested would join in the discussion, and that some sort of idea might be arrived at as to what, in the opinion of the Institute, was desirable in order to increase the restrictions in the erection of buildings so as to prevent the spread of fire and the destruction of human life and property.

Mr. J. Douglass Mathews [*F.*] said that the Professional Practice Committee had held some eight or nine meetings specially to consider this Bill; they had, in fact, gone through it, not only line by line, but word by word. There had been a strong feeling among them at first that the Bill was of so drastic a character and so absolutely impracticable that the best thing to do was to leave it alone altogether. They ultimately decided, however, in view of the fact that the Bill was being promoted by the London County Council, to give the matter their serious consideration, and they had asked the Council of the Institute for their comments. The Committee had therefore drafted a number of amendments to the Bill, the more important of which he would as briefly as possible lay before them. If the Bill was to be introduced into Parliament this year as drawn, it was of the utmost consequence that certain of its clauses should be strongly opposed, in order that the measure, when passed, might prove a workable one. If, on the other hand, the Bill was to be withdrawn, and to come up again next year, then the labours of the Practice Committee would not have been in vain, as they would probably be useful in passing another Bill. The feeling at present was that the Bill had not had that consideration and care in drafting which might have been expected in a measure of such importance. Their first objection was to the definition of the word "owner" as given in section 5 of the Amended Bill—viz. "The expression 'owner,' except as used in section 24 of this Act, means the person for the time being receiving the rack-rent of the premises in connection with which the word is used, whether on his own account or as agent or trustee for any other person, or who would so receive the same if such premises were let at a rack rent, but where used in the said section the said expression shall have the same meaning as is assigned thereto by section 5 of the Act of 1894." It would seem by that and what followed that the owner was to be responsible for everything that might take place in connection with his building. He was not only to carry out the requirements of the Act, but to be responsible for the maintenance of means of exit to staircases, or whatever it might be, after the building had passed out of his hands. The *occupier* should be responsible for keeping the means of exit clear, and for all acts that concern him and those acting under him. So far as the building construction was concerned, the definition of "owner" should stand; but if it were a matter of maintenance, the occupier should be held responsible. A matter of importance in connection with this definition, which no doubt had weighed very much with the London County Council, was that in cases where warehouses and factories were intermixed under the Factories and Workshops Act, there was nothing to enable the owner to continue an exit through a warehouse. Consequently the persons occupying the upper floor would be cut off from the means of escape. That definition of "owner" would regulate a great many of the clauses; but it should be made clear that the owner should be responsible for his part, and that the occupier should be responsible for his. As regards the expressions "high building," "new high building," and "existing high building" in the interpretation section (5), the Council of the Institute suggested that instead of 50 feet the limit under the Act should be 60 feet.

Section 6, a very important section, reads as follows: "Every new high building shall be provided to the satisfaction of the Council with such means of escape therefrom in case of fire for persons occupying or employed or dwelling in or resorting to or frequenting the upper storeys of such building as shall be reasonably practicable, and the owner shall at all times thereafter to the satisfaction of the Council keep and maintain all such means of escape in good condition and repair and in efficient working order and free from all obstructions." The Committee recommend that that section should be amended so as to read: "Every new high building shall be provided to the satisfaction of the Council with such means of escape therefrom in case of fire for persons occupying or employed or dwelling in the upper storeys of such building as shall be reasonably practicable by internal or external staircases, balconies outside windows, access to roofs of contiguous premises, or other means of exit; and the occupier shall at all times thereafter to the satisfaction of the Council keep and maintain all such means of escape in good condition and repair, and in efficient working order and free from all obstructions. Before any new high building is commenced there shall be submitted to the Council plans showing such proposed means of escape, and the Council shall, within fifteen days of lodgment, express their approval of, or dissent from, the same, giving their reasons for such dissent. In case the applicant shall be dissatisfied with the Council's decision, he may appeal to the Tribunal of Appeal." First of all, it is considered very undesirable to retain the words "or resorting to or frequenting the upper storeys of such building"; therefore, it is proposed to omit those words. Then it was desired that some period should be fixed so that the delay which was often laid to the County Council might not occur in this case. Another suggestion was that there should be incorporated in the Act some idea as to what would be likely to be required as means of escape; therefore it is proposed to insert the words "by internal or external staircases, balconies outside windows, access to roofs of contiguous premises, or other means of exit." The Committee suggest that instead of differences being settled by arbitration, as laid down in the First Schedule, power should be given in cases where there is a difference with the County Council, to refer all matters to the Tribunal of Appeal as at present constituted by the Act.

In Section 8, that before revoking any certificate the Council should give seven days' notice of their intention to revoke, the Committee proposed that subsection i. should read as follows:—"If by reason of any change in the use made of any new high building or any part thereof, or if by reason of any addition to or alteration of any such building, the number of persons dwelling or employed in the upper storeys thereof, or the risk of fire is increased, the Council by resolution shall be at liberty, after seven days' notice, to revoke any certificate which they may have granted in respect of such building. The occupier of such building shall, before any such change, addition, or alteration is made, give notice thereof in writing to the Council."

Section 10, subsection (1): "The owner of every existing high building (other than a dwelling-house occupied as such by not more than one family) shall on or before the first day of January one thousand nine hundred and five submit to the Council particulars in writing accompanied by detail plans and drawings of such means of escape from such building as then exist and of the means (if any) proposed to be provided." The Committee suggest that this subsection shall be altered to read as follows:—"The owner of every existing high building (other than a dwelling-house occupied as such by more than one family, and warehouses and other buildings where manufacture is not carried on or persons employed in sedentary occupations, above sixty feet in height from the street) shall, on or before the first day of January one thousand nine hundred and five, submit to the Council particulars in writing, accompanied by drawings to a scale of one-eighth of an inch to the foot, clearly showing such means of escape from such building as then exist, and of the means (if any) proposed to be provided." This clause has been much discussed. The desire of the Bill is to secure to people employed in the building ample opportunity of escaping in case of fire. Many buildings, such as bonded warehouses, or warehouses for the storage of iron, paper, &c., were practically worked by one man, who had command of three or four floors; and there was no special provision needed for them; but provision should be made for persons actually employed in a sedentary occupation, such as clerks working in upper storeys, so that proper means of escape should be afforded them, as it was quite possible that a fire might occur in the lower part of the premises, and they not be aware of it. That exemption, they thought, would get rid of a great deal of the opposition to this clause. The Committee also suggest the addition of the following words to subsection 2: "the details of construction of any new means of escape to be approved by, and carried out to the satisfaction of, the District Surveyor," as tending to avoid delay. Subsection 5, they suggest, should read as follows: "Any such difference of opinion as aforesaid shall, at the desire of either party, expressed by notice in writing to the other of them within fourteen days after such difference of opinion shall have arisen, be referred to the Tribunal of Appeal. The decision of such Tribunal shall be binding on the parties, and the conditions and requirements imposed or made by the Council shall be confirmed or amended or discharged in accordance with such decision." Subsection 6: "If the owner shall be of opinion that the occupier or occupiers of the building ought to bear or contribute to the expense of providing such means of escape as aforesaid he may either before he executes the work or within six months after he has executed the same apply to the County Court having jurisdiction where the building is situate, and the Court may, after hearing the occupier or occupiers or (if after being duly summoned he or they shall fail to appear) in his or their default, make such order upon the application as the Court may deem just and equitable." Here was an illustration of the difficulties that would constantly arise between owner and occupier if the owner were to be held responsible for every infringement of the Act.

The Committee's suggested addition to Section 11 was: "save that the Council may have the power to extend the height for an 'existing high building' from sixty feet to any dimension up to seventy feet."

Section 12 was a very important section: "Every new building (not being a dwelling-house occupied as such by not more than one family) in which sleeping accommodation is provided for more than thirty persons, or in which more than thirty persons are employed." It was proposed for the words, "or in which more than thirty persons are employed," to substitute "above the ground floor." In Subsection 2 the Committee proposed to strike out the words "or resorting to or frequenting," and in the beginning of the next paragraph to insert the word "occupier" instead of "owner." In Subsection 4, instead of "or in which more than thirty persons are employed," to substitute "above the ground floor," and to omit the words "or in which more than thirty persons are employed." This confined the operation of this clause to sleeping accommodation.

Passing over a few alterations more or less contingent on previous amendments they came to Section 17. Subsection (2), dealing with separate sets of chambers or offices, the Committee suggested should read as follows: "Separate sets of chambers or offices or rooms, tenanted or constructed or adapted to be tenanted by different persons, shall, if contained in a building exceeding forty feet in height" (the Bill said twenty feet) "and ten squares in area, be separated, so far as they adjoin vertically, by partitions constructed of fire-resisting materials, and so far as they adjoin horizontally by floors or arches constructed of fire-resisting materials; and if such sets of chambers, offices, or rooms are contained in a building exceeding twenty-five squares in area, all the floors throughout and the principal staircases and enclosures of same shall be constructed of fire-resisting materials." This clause would be very strongly contested, as it would affect an enormous number of high office-buildings both in the City and in Westminster. To Subsection 4 the Committee recommend that the following should be added: "Unless the floors be constructed throughout of incombustible materials not less than six inches thick, and the principal stairs and the enclosures of same be of incombustible materials." In Subsection 5, "and all passages, staircases and other means of approach from the *street* to the part used as a dwelling-house shall be enclosed with and constructed throughout of fire-resisting materials other than wood to the satisfaction of the District Surveyor." Instead of the word "street," it was proposed to substitute "front door (provided such front door be set back not more than five feet from the front of the building)." It often happened that the upper part of a house was let for a dwelling, and the ground floor perhaps for a shop. If the clause stood as drafted, two doors would be necessary, and in many places in narrow-fronted buildings these would take up a considerable portion of the frontage. It was therefore suggested that in the case of a lobby not more than five feet from the front the end of the fire-proofing should stop at the door leading to the upper part. Subsection 6 was another awkward clause. If the frontage of a building did not exceed 20 feet the passage or staircase was to be 2 feet 6 inches wide; exceeding 20 feet but not exceeding 30 feet, it was to be 3 feet wide; and exceeding 30 feet it was to be 3 feet 6 inches wide. Nobody, he thought, desired to have a 2 feet 6 inches passage in case of fire, and therefore the Committee suggested that the subsection should read as follows:—"All passages and staircases, and other means of approach referred to in the last preceding subsection of this section shall be not less than 3 feet wide." In Subsection 8—another much-debated clause—it was provided that at every 40 feet of frontage there should be an additional staircase, and, if necessary, an entrance. It would be seen at once that such an arrangement would not act. Supposing a building with 100 feet frontage to the street and 40 feet deep, it would necessitate three entrances in the 100 feet. Supposing, on the other hand, it was exactly the same size building, but had a 40 feet frontage and a depth of 100 feet, one staircase would suffice. That would be an absurdity, and it was therefore suggested that the frontage limit should be taken out altogether and a restriction placed as to the area, say of fifty squares.

In Section 21, dealing with penalties, the Committee suggest the insertion of the words "or occupier" after "owner." But it was desired as far as possible that everything should be in the hands of the Tribunal of Appeal, and that, although they might not have the power to inflict a penalty, it should be inflicted on the report of the Tribunal of Appeal to the Petty Sessions.

Section 22: "For the purpose of complying with the provisions of the sections of this Act of which the marginal notes are," &c., &c., "it shall be lawful for the owner of any building not being the occupier thereof, notwithstanding any provision to the contrary contained in any lease, underlease or agreement of or relating to any part of such building to enter such building or any part thereof and carry out all such works as may be necessary to comply with the requirements of the Council or with any of the provisions of the above-mentioned sections of this Act, and if the occupier of such building or any part thereof suffers damage by reason of the execution of such works he may apply to the County Court having jurisdiction within the district in which the building is situate, and the Court may after hearing the owner or (if after being duly summoned he shall fail to appear) in his default make such order for compensation to be paid by the owner as the Court may deem just and equitable." He did not think that such a clause as that could possibly be enforced; but the Committee suggest that this, as with all matters in dispute, should be referred to the Tribunal of Appeal.

Section 24, dealing with fees to District Surveyors: the Committee consider the fees proposed too small, and he was glad to say that the District Surveyors' Association thought so too, and had themselves made a schedule which the Committee recommended should be adopted. There were other alterations consequent upon those suggested, all of which had been carefully specified by the Committee.

In conclusion, Mr. Mathews mentioned that the Committee had been favoured by a deputation from the Surveyors' Institution, consisting of the President and four members of the Council. In considering the Bill they had taken a somewhat different view from that taken by the Practice Committee, looking at it rather from the property standpoint. The Surveyors' Institution intended to petition against the Bill on the broad ground of its serious detriment to the value of property, and of injustice between lessors and lessees and other interested parties. Whilst approving of the provision of means of escape in new buildings, they considered that these regulations, if applied to existing buildings, would be oppressive as affecting owners, lessees, and mortgagees of London properties, and would tend to prevent persons of the middle class from carrying on business in their own residences. He thanked the members for their patience in listening to his necessarily disjointed remarks.

Mr. Wm. Woodward [*A.*], after proposing a vote of thanks to the Practice Committee for the trouble they had taken to thrash out the Bill and bring their suggestions before the meeting, said he was sure that every one was desirous, as far as possible, to support by every means in his power measures for the prevention of death by fire. But when they considered the number of deaths by fire in comparison with the population of London, it must be admitted that such a measure as this was out of all proportion to the loss sustained. It might as well be said that because of the number of deaths through persons being run over in the streets of London, which far exceeded the number of deaths by fire, therefore people should not venture into the streets without some measure of this sort which would give the police the control which the London County Council proposed to give itself in this Bill. Curiously enough, although the Bill was so very drastic, yet it omitted from its provisions the very buildings from which loss of life by fire was most frequent; for example, oil shops and other small shops, with their occupants on the first, second, and third floors, were not brought within the provisions of the Bill at all. The two main mischievous features of the Bill were these: First, that Part II., a very important part, was retrospective. In six years from the present time the whole of the buildings in London which were 50 feet, or exceeded 50 feet in height, would be brought within the purview of the Bill if it became law. The second mischievous feature was that the authority to deal with the provisions to be made for escape in case of fire was the London County Council. From his experience of the London County Council with regard to works to be done under the Factories Acts, they were met unnecessarily with requirements which they would not be called upon to fulfil were it not for the fads of some of the officials of that body. With regard to the definition of "owner," that word had never yet been clearly defined; it had not been clearly defined in the Building Act of 1894; it was not clearly defined with regard to the service of party-wall notices; it was by no means clearly defined in the Bill under discussion. But the execution of the works under the Bill would have to be done by the owner, and supposing the lessee was not financially strong the owner might find himself in this position: that having expended thousands of pounds in carrying out works required by the County Council, he had to fall back upon an uncertain tenant, who would leave him the premises not so lettable as they were before the County Council came with their requirements. Therefore the word "owner" should be much more clearly defined. With regard to intermediate lessees one could conceive a very great hardship. Imagine such a building as Mr. Douglass Mathews referred to, where the upper and lower parts were occupied in such a way that they came within the Factory Acts, and the intermediate floor was occupied by a lessee in a way which did not come within the Factory Acts. A staircase and means of exit had to be made in the building, and necessarily it should pass through the floor of the lessee who was not under the Factory Acts. The loss to that man might be enormous, because the area taken up by the staircase would be considerable, and might interfere materially with the accommodation of his building and with its user. It would be monstrous to pass an Act of Parliament which would compel a man who was not under the Factory Acts to comply with the requirements of the County Council in regard to parts of the building which were under those Acts. He could not understand why the County Council desired to substitute 50 feet for 60 feet. In the Act of 1894 the height sanctioned of buildings was the result of a conference with the Chief of the Fire Brigade, because their fire appliances could reach the 60 feet. Why, then, should the Council now endeavour to bring buildings only 50 feet in height within the purview of the Bill? It would be very hard upon people who, having a building of the height of 60 feet, had obtained the certificate of the County Council that the means of escape were sufficient, that they should now, if there was a wall only 50 feet high, be brought within the purview of the Bill which reduced the height to 50 feet. It might in some cases be a serious hindrance to the occupancy of the premises. With regard to arbitration, let them consider with whom they were to arbitrate. With a body spending the ratepayers' money, which could take the poor litigant from Court to Court until they had exhausted his patience and his finances! That was not arbitration as it was understood in the ordinary way. Arbitration, if it was to be fair, should be fought between men more matched with each other than would be the case if the County Council were one of the parties. The tribunal to which such disputes and all other questions arising under the Bill ought to be referred should be a tribunal similar to that under the Building Act. Again, with regard to matters dealt with by the Bill, why should not the Borough Councils have more to do with them, rather than the whole thing be left to the central body? The central body was already overwhelmed with work, and when one remembered that the whole of the buildings in London over 50 feet in height were involved, one could imagine the neglect that would arise in other business and the disastrous delays that would occur in the administration of the Act. It was certainly a curious coincidence that this Bill should be formulated so soon after that dreadful fire in Queen Victoria Street where the loss of life occurred because the London County Council had not the appliances possessed by other countries and by some of our own provinces. With regard to Part III., which was not retrospective, they should all agree, when they knew exactly what the County Council required, that in the case of new buildings they could in their designs make them, as they should be made, fireproof, with proper staircases and proper exits. But Part II., which was retrospective, was most drastic, and would mean absolute ruin to many of the leaseholders of London. The matter of lift enclosures should be looked carefully into. It would ensure considerable diminution in the staircases, because the lift could not be placed in such a way as they could place it now. Fireproof doors leading on to staircases and fireproof frames, again, would be very unsightly in such buildings as hotels, where sightliness in small details had to be considered. The requirement, again, of two entrances for a building of 40 or 42 feet frontage was absurd.

Mr. Edwin T. Hall [*F.*] said he would like to second the vote of thanks that Mr. Woodward had proposed to the Practice Committee for the care and attention they had devoted to this Bill. He should like to offer some criticisms on the Bill itself, and also on the suggestions of the Practice Committee. With regard to the Bill, he could not help feeling when he read and studied it, that a condition precedent to saving life was to have life to save. If the Bill were carried out it seemed to him that there would be no manufactures carried on and no persons engaged in carrying them on in London at all. There were many questions of principle involved, and many questions of detail which were almost as important as the questions of principle. They were all agreed that in every high building there must be efficient means of exit for any large number of persons employed in it; therefore, if the Bill had been confined to dealing with exceptionally high buildings, it would have had a greater chance of passing through Parliament than was possible as at present drafted. But it dealt not only with high buildings. First it dealt with buildings that were new and high, then with buildings that were old and high, and later on with buildings that were not high at all—they might be only two storeys, and yet they were to come within the purview of the Bill. As regards definitions, he thought there should be a separate definition of "occupier," in order that his obligations might be clearly stated in clauses properly drafted later on in the Bill. Section 8 of the Bill related to a change, an alteration, in the building, which involved an increase in the number of persons who might be employed, &c., and required the owner to give notice of the proposed change, or in default rendered him liable to lose his certificate. It was quite possible that the owner as such might not be the person making the change at all; it was more than likely that the occupying tenant, who had, say, thirty girls employed making collars, owing to a sudden rush might put sixty in, and under this clause, which the Committee had not criticised, the unfortunate owner was to be penalised. He thought it should be the occupier, or failing the occupier the building owner, who should give the necessary notice of any change or alteration, and be the person held responsible. Then with regard to another question of principle, he would venture to criticise an observation of Mr. Woodward's. Mr. Woodward said that the County Council would be able to drive people from court to court. But the Bill distinctly said that they should arbitrate those questions, and there was a section which laid down what the arbitration was to be. Speaking broadly, in case of dispute each person appointed an arbitrator, and an umpire was appointed; therefore there was no question of dragging from court to court. But then there was a question of principle: if there was to be an arbitration should the dispute go before a court such as he had just sketched, that is to say, one practically of three surveyors, or should it go to the Tribunal of Appeal? Of course, there was much to be said for both sides. If they went to the Tribunal of Appeal, they got a continuity of practice and of judgment, perhaps. If they went to the ordinary arbitrators, they got the opinion at all events of two out of three experienced men. Which was the better he was not prepared to say. On the whole he thought the Tribunal of Appeal might be the better; but if that were so ought they not as a principle to lay it down that in every case where the County Council had power to compel works to be done there should be a right of appeal? At present, in some cases there was an appeal and in other cases there was no appeal whatever. One could not forget, too, that in some cases the County Council would not tell why they came to a decision and one could not make them—they would give a reason sometimes, but not always. Therefore he submitted that they ought always to have an opportunity of meeting the Council before some body where they could know the Council's case and the Council could know theirs, and the Tribunal could decide between them. Mr. Woodward had said that Part II. dealt only with old buildings. But Part II. dealt with both old and new buildings. The first section began, "Every new high building shall," &c. Section 11 of Part II. dealt with old buildings; after 1907 all old buildings were to be made to conform to the Act. Now old high buildings very frequently wanted considerable alteration, and the cost was sometimes heavy. He himself had a case in Wood Street not long ago. They had a building with a 20 feet frontage, and some 100 to 120 feet deep. He had to put a County Council staircase in there, which alone cost nearly £4,000; and that was a very serious tax, except under great necessity. He believed it was necessary in that case, and he so advised his clients. Coming to Section 12, which was to be operative in every case, there was no question of height involved at all. "Every building," irrespective of height, with sleeping accommodation for more than thirty persons, or in which more than thirty persons were employed, was to be provided with means of escape. Now, had the County Council or had the Practice Committee considered what that meant? Every suburban house where there was a ladies' school would come under the operation of that section, and must have a staircase of fire-resisting material, and every master's house attached to any school round London; every private lodging-house—not being, of course, a common lodging-house—would come within it. It meant, in effect, that where there were thirty persons sleeping in a house, that house would have to be converted into what one might call a fire-resisting house. That would mean an immense outlay; and for what purpose? Practically no one was ever burnt in such houses. They were dealing here with four-and-a-half million people. A few people were burnt to death annually. Everyone regretted it; everyone wanted to do all that was reasonably necessary to prevent it. But to have a section like that, which applied to suburban houses in London, seemed to him preposterous, and so drastic that it was perfectly unreasonable. Proceeding to Section 17, that section was in Part III., and these clauses, as distinct from the others in the Bill, were amending clauses to the Building Acts. Section 17, putting it shortly, said that, among others, every block of offices must have every separate tenement partitioned off from every other separate tenement by a fire-resisting partition. Consider what that meant. If this was right, on every change in extent of tenancy in London there would be a repartitioning. In the City of London there were blocks consisting of separate tenements varying from one to twenty rooms in size. If a man occupied twelve rooms, and he left this year and somebody else came in and took two rooms, and another three rooms, or four rooms, every one of those separate tenements must be enclosed by fire-proof partitions. What did that mean? It was an impossible tax on people, and an impracticable tax. Then, again, Subsection 4 limited the area of an office building to 50 squares. That meant a site of 50 feet by 100. They could have no such buildings as the Prudential Insurance Office, Gresham House, Palmerston Buildings, or the Birkbeck Bank. These buildings would have to be things of the past, because this subsection limited the area of any office building. Coming to Subsection 8 of the same section — and this was what Mr. Douglass Mathews referred to as the clause dealing with every 40 feet of frontage—the drafting of that subsection was perfectly unsound. It probably had in view flats erected over shops. He should think that was what must have been in the mind of the draughtsman; but the governing section to which they referred back spoke of it as a building "exceeding ten squares in area, used in part for purposes of trade or manufacture, and in part as a dwelling-house." Did they contemplate that any dwelling-house, as such, on or above the first floor, was going to extend normally to beyond 40 feet? But if they contemplated a series of flats, then the clause was improperly drafted. To meet that case it should be something to the following effect: That if there were a series of upper storeys containing flats horizontally extending on any floor for a length of frontage exceeding 40 feet, then there should be a separate staircase for each series of flats from bottom to top. He did not profess to give the exact words. Then Section 18, Subsection 3, apparently related to shops with residences for assistants over; but as drawn it said, "if the frontage of such building to any one street exceeds 40 feet, an additional staircase and (if the circumstances so require) a passage enclosed and constructed as aforesaid shall (unless the Council otherwise permit) be provided in respect of every 40 feet or fraction of 40 feet of frontage beyond the first 40 feet." Now if this section were intended to deal entirely with shops—it spoke of people in considerable numbers living over, and therefore he presumed it meant shop assistants—then surely the proper thing would be, no matter what the shape or frontage of the building, that there should be alternative escapes for those persons, and that there should be one staircase in a certain proportion to the number of people sleeping on the premises—it might be reasonable to say that for every fifty persons there should be a separate staircase or separate exit. That would be a rational way, at all events, of dealing with it. But under this section they could have a building with 30 feet frontage and 200 feet deep, with 100 people sleeping above, and apparently one staircase would be sufficient; but if they had 200 feet frontage and 30 feet deep, they must have five staircases. Now, where they had 200 feet frontage, they could have fire-escapes and ladders, and save all the people, whereas they could never save all the people in a building situated on the other plan. Then with regard to lift shafts in section 20, the lift shafts in staircases were provided for—they could be made as they are now, but there was a third alternative which was not considered here, which he believed would be better than that specified, from the point of view of fire. This, he might say, was what he had done himself, and he had discussed it with the chief fire insurance companies several times, and they agreed that it was a most excellent plan. It was this: If they could have their lift not enclosed at all, except by lattice, but provided with some fire-resisting flap doors which should close in the floors when the lift had stopped, one would get rid of the great evil which this Bill would bring about, namely, making the shaft of brickwork like a big furnace shaft, so that when the fire got into it, it would run up and set the whole building on fire. If it was not enclosed at all there was no shaft and no means of fire spreading. That, at all events, should be put as an alternative. Then with regard to compensation, it seemed a most iniquitous thing that the owner should have to compensate his tenant for damage by reason of works imposed on him by the public authority. The owner was not only justly compelled to expend many hundreds of pounds in altering his building, but he was to compensate his tenant for the damage that the County Council had caused him to impose upon his tenant. There was one clause drafted by the Practice Committee to which he should like to draw Mr. Douglass Mathews' attention, viz. Section 10, Subsections 1 and 2; this was their suggestion: "The owner of every existing high building"—and these are the exemptions—"other than a dwelling-house occupied as such by more than one family"—I think they mean "by not more than one family." [Mr. Douglass Mathews: Yes.] And then they go on to say: "And warehouses and other buildings where manufacture is not carried on or persons employed in sedentary occupations above 60 feet in height." Surely they did not mean that! If the building was above 60 feet in height it was to be exempt from the operation of the Act, but if it were less then it was to come within the Act! Then again the details of construction and the rest of the sentence ought to come in after Section 10, Subsection 5. Those were details which he need not trouble them with, because he had dealt with the main principles, and the main principles were such that he ventured to say it showed the wisdom of the Parliamentary Committee in suggesting to the County Council that the Bill should be withdrawn. It should be withdrawn; it should be reconsidered so that it should deal with admitted and grievous danger which required to be remedied; but it should have that self-restraint which all building legislation must of necessity have to commend itself either to Parliament or to architects. He was sure that when the County Council produced such a Bill it would be received and criticised with great care by members of the Institute, and he was also sure that the Institute would at all times be most happy to co-operate with the London County Council in making sound and wholesome legislation for buildings in London.

Mr. Bernard Dicksee [*A.*] expressed disappointment that one point seemed to have been entirely missed by the Practice Committee—viz. that an architect, when preparing plans for a new building, was entitled to know exactly what he had to cope with in the way of legislation. As the Bill was drawn, in the case of buildings coming within the provisions of Part II., plans must be submitted in almost every case to the County Council for approval before a brick could be laid. That was one of the great faults of the Bill. Every provision, he contended, should be laid down, as much as possible, as a hard and fast rule. But the Council should have power under the Bill to allow deviations at their discretion. The District Surveyor should have the carrying out of a definite set of rules in the case of all new buildings. It was perfectly clear that when provisions came to be applied to existing buildings, there must be some authority to set things in motion, and certainly, speaking for himself as a District Surveyor, he should not like to be that authority. It must, he thought, be in the hands of the authority for the whole of London. With regard to the suggestion that the Borough Councils should have a finger in the pie, he thought the little they had to do with under the present Building Acts, as to wooden structures, was one of the greatest mistakes ever made in modern legislation; they licensed structures that were properly buildings. With regard to Clause 17, he thought Mr. Hall had not quite grasped the operation of that clause. It was to take the place of that much-debated section in the London Building Act, Section 74. A building used in part for purposes of trade and in part as a dwelling was not a building of flats, but a large trade building, such as a drapery store, where people resided on the premises. The Section 74 was put in at the instigation of the District Surveyors (though he was glad to say it was not their wording), because of a bad fire some years ago in Lavender Hill, and the more recent one at Garrould's, Edgware Road. It was put in to provide that where a building was used jointly for trade and dwelling there should be a definite separation between the two parts. Unfortunately, the Judges had placed upon that section a construction that nobody intended it to bear, and it had become practically a dead letter. It was sought by the Amendment Bill to set that right, but he was bound to admit that the clause as drawn did not do so. The District Surveyors had re-drafted the clause, and they hoped that the County Council would adopt it as revised.

Mr. Hall said he had not misunderstood Section 17. Subsection 2 spoke of buildings containing separate sets of chambers or offices, and he had addressed himself to that. Subsection 5 of the same section dealt with what Mr. Dicksee was speaking of. He (Mr. Hall) differentiated between the two. He had only referred to the absurdity of the 40-feet frontage.

Mr. Edward Greenop [*A.*], *Hon. Sec. Practice Committee*, referring to Mr. Bernard Dicksee's criticism, said that the Practice Committee had not lost sight of the fact that these matters of new buildings were to be left to the County Council. The Committee strongly advised that all details should be left to the District Surveyors, so that they might avoid going to the County Council upon those points.

Mr. C. H. Brodie [*A.*] said that the whole business had to be rushed through at such a rate that the Practice Committee had had but a very short time in which to consider the Bill. The County Council had named a date by which the recommendations from the Institute should reach them, and the Practice Committee had had to meet night after night. He himself happened to be out of London, so that the onus of the whole business fell on his friend and colleague, Mr. Greenop. Taking into account the difficulties of the work and the short time at their disposal, it was not to be surprised at if some mistakes had crept in. As a matter of fact, the gentlemen who had spoken that evening, and who had had the recommendations of the Practice Committee before them, were in a very much better position than the Practice Committee were when the matter was being considered by them. On the general principles involved in this sort of legislation, he could not but think that the County Council, and even Parliament itself, would be well advised to consult people who knew something about the matter they were taking in hand. He doubted if the Municipal Council of Paris, for instance, would be listened to in Parliament for a moment unless they first showed that they had taken the opinion of the qualified body of professional men whom they were employing, and that those qualified professional men had either drafted or approved the measure. As far as he understood, the District Surveyors, the people of all men in the world who knew the difficulties of such legislation as this, and who were prepared to meet those difficulties, did not appear to have had the slightest hand in the preparation of this Bill. The same remark applied to the Institute, a body of professional men well known to be always willing to assist the County Council in questions of this kind. He felt very strongly that no Bill of this class should have even a chance of passing in Parliament unless it were put forward with the consent of the Institute and of the Surveyors' Institution.

Mr. Thomas Blashill [*F.*] thought that architects, at all events, should approach this matter not merely by a verbal statement that they were willing to do everything for the public good, but they ought to show their willingness by the propositions they themselves either made or felt inclined to agree to. They should not leave it in doubt whether anything was wanted at all. This Bill was intended to provide means of escape against fire. It was not the intention to say, "if the owner can do it at a moderate expense." He must do it. He must provide means of escape. That must be understood, and then the question narrowed itself down to questions of detail. A good deal of objection had been taken to the inclusion of persons "resorting to" a building. Suppose the case of a good many hotels or places often used for public meetings, where hundreds of people were sometimes packed together —not employés, not clerks, not assistants, not men working in factories. Were these people not to have any protection? If the words "resorting to" were not the proper words, surely some other words might be substituted. The proprietor of a hall where people came to hear music would be obliged to provide means of escape; but if people met together to talk over company matters and things of that kind, were they not equally entitled to protection? And if the words used in the Bill were not the right words, could not another form of words be suggested? He hoped that every architect would simplify this matter, as far as lay in his power, by the simple process of having none but fireproof floors. Could they not make it known in some public way that no architect who had proper care for his clients and for the lives of persons living or lodging or sleeping or working or even resorting to the building would ever make a floor other than a fireproof floor? It was a great many years since he had put in any other kind of floor. Every artisans' dwelling erected by the County Council had not only fireproof floors, but fireproof partitions. A fireproof partition was not only a cheaper partition, if properly constructed, but took up less room, needing to be only 2½ inches instead of the 6 inches required for the old-fashioned partition. As regards panelling, he hoped architects would not yield to their clients who wanted panelling with open space behind it. Nothing had carried fire, in the days of dangerous fires, like hollow spaces in panelling. He did not know that panelling was wanted at all, but if it was used there must not be any space behind it. Every one would agree that the oil-shops were very dangerous premises. In his judgment the provision of the present Act, that there should be ten squares before they could demand a fire-resisting floor, was absurd. There was no reason whatever for omitting in the case of any building used partly for trade or manufacture and partly as a dwelling proper fireproof construction between the two parts, whatever the area might be. As regards the operation of the Bill being "retrospective," they could not justify the making of new buildings fire-resisting at the expense of the persons newly building without sooner or later making it retrospective. He did not know who the people with fads were to whom Mr. Woodward alluded. He ventured to say that those things which were called "fads" were the result of the experience of people who had to look after these matters. It would have been perfectly easy for gentlemen to have come to this meeting prepared with some cases in which they had been ill treated by the powers that be or were, but not one of them would do anything of the kind. A statement had been made that evening which he had many times before controverted—viz. that the County Council would not give reasons. Over and over again, however, had he given his reasons to those who had come to see him about these things in years gone by. He did not know what the practice was now—it might be entirely different; he could only speak of his own experience.

Mr. Hall: I should like, if I may be allowed to interrupt, to say that we all know that Mr. Blashill was most considerate and kind. My observation was that sometimes they would give an explanation and sometimes they would not.

Mr. Blashill, continuing, said that the statement was made in his time unfortunately, and was made before Committees of Parliament. He was challenged by the Chairman of a Parliamentary Committee: "Why do you not give reasons?" and he replied that in ninety-nine cases out of a hundred the only reason they could give was that they considered the thing to be dangerous, and that did not satisfy the objecting party. Afterwards, when they were obliged to give reasons, they could only say that, and the other side were not any more pleased than before. With regard to lifts, he had himself taken the responsibility to permit, and indeed to encourage, architects to adopt in proper places, such as factories, a lift which was enclosed not by brick walls, or any sort of enclosure making a chimney-like structure, but by fireproof netting; but it was only in certain cases, and then they made them put a partition five feet high, so that any person slipping might crawl out and get past the lift. In conclusion Mr. Blashill pointed out that they had the fire insurance people to look to, who were getting more exigent than the County Council itself.

The President said that they were all agreed that the clauses of the Bill as drawn were far too drastic for the present occasion; the Council had come to the same conclusion after they had heard Mr. Douglass Mathews' representations, and they had so written to the County Council. The Council also proposed to take steps to be represented before the Committee of the House should the Bill reach that stage. From representations made to him he knew that the County Council were desirous of having the opinions of members on this Bill, and were also willing to consider the opinions which they might lay before them, and to adapt, as far as possible, their Bill to what they admitted to be an expert opinion of the greatest possible value to them in drafting such a measure as this. There was one other thing he thought they were all agreed upon—viz. their obligations to the Practice Committee for the enormous trouble and labour that they had gone through. He had heard of them sitting up to 12 o'clock at night going through the Bill and preparing their amendments. Mr. Douglass Mathews had come down to the Council and explained it, as he had done again at that meeting; and Mr. Greenop and other members of the Committee had taken the greatest trouble with it. Although it might not be very interesting, there was no doubt that measures of this kind affected architects to an enormous extent, and it was impossible very often for them to realise till afterwards the extraordinary difficulties that such measures placed in their way. There were other measures that had slipped through, such as the obligation to place soil pipes on their front elevations, and things of that kind, which affected architects very closely, and if gentlemen would take the trouble, as the Practice Committee had done, to look into these matters and inform them where they thought such regulations would work hardly upon architects, it was impossible not only for the Institute but for the whole body of practising architects in London not to feel their indebtedness to the gentlemen who took that trouble. He therefore asked the meeting to pass very heartily the vote of thanks which had been proposed by Mr. Woodward, and seconded by Mr. Hall, to the gentlemen of the Practice Committee for the trouble that they had taken.

Mr. Douglass Mathews thanked the meeting in the name of the Practice Committee for the Vote of Thanks which had been accorded them. The Committee had had nine meetings, many of them largely attended, and they were therefore accustomed to differences of opinion upon certain points. They would have been much surprised if everybody present had agreed to all that the Practice Committee suggested. Something had been said with regard to different clauses being retrospective. That was a difficulty, no doubt, but if it was necessary in the case of new buildings to guard against loss of life, it was equally necessary to make the old buildings safe. He agreed with Mr. Woodward about the oil and drapery stores. It would be a good plan to turn their attention to some simple means of rendering dwellings secure over such shops. He fully agreed with what Mr. Hall had said as to Section 12 applying to all buildings. It did apply to all buildings where more than thirty people were employed or slept—"frequented or resorted to," to use the words of the Bill: in fact, it would take in an ordinary three-storeyed house occupied in offices, and would also apply to every building practically—churches, schools, and places of worship; not even their own meeting-room at the Institute would be exempted. He did not quite understand where they were wrong with reference to Section 10 in exempting buildings above 50 feet where people were not employed in sedentary occupations. If a building was more than 50 feet, according to the Act it was a high building, and it was the high buildings that were exempted provided they were not used for sedentary employments. With regard to Mr. Dicksee's complaint that they had not defined what the requirements of the Act should be, the Committee had endeavoured to do so, so far as they could. It was impossible for anybody to say in an Act of Parliament exactly what should be done in every case; but they agreed that something more definite was required, and they proposed to insert the words: "by internal or external staircases, balconies outside windows, access to the roofs of contiguous premises, or other means of exit."

Prizes and Studentships 1903–1904.

The pamphlet giving full particulars of the Prizes and Studentships offered by the Institute for the year 1903–1904 will be issued to members with the next number of the Journal. The prizes and subjects are briefly as follows:—

The Essay Medal and Twenty-Five Guineas, open to British subjects under the age of forty.—*Subject*: "The Delineation of Architecture."

The Measured Drawings Medal and Ten Guineas, open to British subjects under the age of thirty.—Awarded for the best set of measured drawings of any important building—Classical or Mediæval—in the United Kingdom or abroad.

The Soane Medallion and One Hundred Pounds, open to British subjects under the age of thirty.—*Subject:* Design for a University Theatre on an Open Site.

The Pugin Studentship: Silver Medal and Forty Pounds, open to members of the architectural profession (of all countries) between the ages of eighteen and twenty-five.—Founded to promote the study of the Mediæval Architecture of Great Britain and Ireland, and awarded for the best selection of drawings and testimonials.

The Godwin Bursary: Silver Medal and Sixty-Five Pounds, open to members of the architectural profession without limitation of age.—Founded to promote the study of works of Modern Architecture Abroad, and awarded for the best selection of practical working drawings, or other evidence of special practical knowledge, and testimonials.

The Owen Jones Studentship: Certificate and One Hundred Pounds, open to members of the architectural profession under the age of thirty-five.—Founded to encourage the Study of Architecture, more particularly in respect to Ornament and Coloured Decoration. Competitors must submit testimonials, with drawings exhibiting their acquaintance with colour decoration and with the leading subjects treated of in Owen Jones's *Grammar of Ornament.*

The Tite Prize: Certificate and Thirty Pounds, open to members of the architectural profession under the age of thirty.—*Subject:* A Design, according to the Principles of Palladio, Vignola, Wren, or Chambers, for a Crescent in a Large City.

The Grissell Gold Medal and Ten Guineas, open to British subjects who have not been in practice more than ten years.—Founded to encourage the Study of Construction. *Subject:* Design for a Timber Spire or Lantern Termination to a Tower.

The Arthur Cates Prize: A Sum of Forty Guineas, open to British subjects who have passed the R.I.B.A. Final Examination at one Sitting during 1902 and 1903.—Candidates must submit (1) The original testimonies of study which procured their admission to the Final Examination; (2) Not less than three sheets comprising studies of subjects of Classical, or Renaissance, and of Mediæval Architecture, accurately drawn in perspective and shaded by rule, and also detailed studies of a groined vault of any period between A.D. 1100 and 1500. The prize will be awarded for the best set of drawings.

The Ashpitel Prize: Books value Ten Pounds.—Awarded to the student who distinguishes himself most highly in the Institute Final Examinations 1903.

Copies of the pamphlet may be obtained at the Institute, price threepence each.

Architects' Registration.

At the General Meeting last Monday the President stated that the attention of the Council had been drawn to a circular issued to architects and others headed "A Government Diploma for Architects" This document, he said, gave no details, but he had been empowered by the Council to announce that they were still opposed to any such scheme of registration as that set forth in a previous Bill dealing with the same subject; but when the details of the proposed Bill were before them, and had been duly considered, the Council would be prepared to give their definite views as to the course to be taken.

Chepping Wycombe Town Hall Competition.

The Corporation of Chepping Wycombe having altered their conditions by adding to Clause 3, after the words "themselves prefer," the words "but it is the intention and the wish of the Corporation to accept the Assessor's award unless there should appear any valid reason to the contrary," the President of the Institute has consented to nominate an Assessor.

The Wellington Monument at St Paul's.

Some admirable views, now published for the first time, of Stevens's full-size plaster model for the equestrian statue of the Duke of Wellington in St. Paul's Cathedral are given in the *Architectural Review* for March. Since Stevens's death this model (minus the Duke's head, which was sawn off by Mr. Stannus and preserved separately for greater security) has lain in the crypt of St. Paul's. As it was kept covered up it was scarcely ever noticed by visitors; and even when uncovered, the bad light, the closeness of the model to the wall, and the absence of the rider's head made it difficult to form an accurate idea of the design and of its condition. The model is represented in the *Architectural Review* as seen from various points of view—two front views, right and left; also as designed to be seen from the nave, and again as it was to be seen from the north aisle. Such defects as there are in the model—the broken fingers and fractured drapery, the missing hoof and tail—can, it appears, all be made good by following carefully the small sketch model of the equestrian figure at South Kensington. Mr. D. S. MacColl, discussing in the *Review* the question as to how far Stevens had "finished" his model, is of opinion that the last refinements had not been given to the work.

The state of the hoof, the tail, the hands, the draperies, the mane, the holsters, and much of the surface modelling speaks of a stage short of this. The head, however, as is evident from the photograph, had been brought to a higher state of finish, and is a most interesting reading of the Duke as portrait sculpture. Stevens's practice was to do a good deal of his final shaping by work upon the plaster with riffel-files and other scraping tools. Parts of the horse show signs of having been modelled thus in the plaster, and there can be no doubt that Stevens would have taken up his details again and wrought them nearer to the degree of finish found in the bronze of the allegorical groups. Mr. MacColl rightly points out, however, that the horse will be farther from the eye than these groups; that at the height of the monument, and in the light of St. Paul's, the difference between highly finished detail, and detail short of that finish, will be hardly discernible; and it may well be supposed that Stevens would have treated his detail more broadly than in the case of a group to be seen at the level of the spectator's eye. "Stevens's magnificent design is there, however," says Mr. MacColl, "arrested possibly in some particulars by his death; but in a shape that no living man, even if he had Stevens's genius, would have the right to touch, supposing he had the desire." The *Architectural Review* has other illustrations, sketch drawings and models, connected with the design of the monument.

Rights of Authorship in Architecture.

The Committee of the Société Centrale des Architectes Français has passed the following resolution concerning the rights of authorship in architecture: "The architect has the right to forbid the reproduction by photography of any public or private building of which he is author, unless, of course, an agreement to the contrary has been made between him and the owner of the building. In the case of any reproduction of the building by photography and the sale of these reproductions, the architect has the power to exact the fees due to his right of authorship. The mention of his name and his quality as architect is obligatory on all reproductions."

Prizes for Architectural Studies.

The Technical Education Board of the London County Council offer the following prizes for carefully executed drawings of buildings, churches, and of artistic objects in museums (South Kensington Museum and the British Museum especially). Two prizes of £15 each, two prizes of £10 each, and two prizes of £5 each. The drawings may be in pencil, ink, or colour, as best fitted to the subjects represented. The subject selected may be in several classes of work or wholly in one, as, for instance, goldsmiths' work, furniture, stained glass, pottery, ironwork, fine textiles, embroideries, &c. The objects must be represented as faithfully and carefully as possible; no mere sketches will be accepted. As far as possible the drawings should be of full size, or an actual or approximate scale should be noted, together with any explanatory notes thought desirable. Students are recommended to select objects in the classes of work in which they are most interested, and from Gothic or Eastern examples as much as or more than from those of Renaissance style. Works submitted for competition must have been executed since the summer of 1902, and must not previously have been sent in for any competition. Candidates must be resident within the County of London and students in schools which are maintained or aided by the Board.

The Cardiff Society.

The Cardiff, South Wales, and Monmouthshire are doing valuable work in providing facilities for their younger members and students to inspect and have explained to them various details of the important buildings in course of erection in their neighbourhood. Last Saturday a party of about fifty were conducted over the new Town Hall and Law Courts by the architect, Mr. H. V. Lanchester. The President, Mr. David Morgan, and some of the past Presidents of the Society accompanied the party and assisted in explaining the character of the work as they went round the buildings.

REVIEWS.

BUILDING CONTRACTS.

Conditions of Contract Relating to Building Works. By Frank W. Macey, Architect Revised as to the strictly legal matter by B. J. Leverson, Barrister-at-Law. 8o. *Lond.* 1902. *Price* 15*s.* [*B. T. Batsford,* 94, *High Holborn, W.C.*]

This work deals—and perhaps too fully for the average architect's attention—with conditions of contract and with agreements as applied to all classes of building works. Further—and this no doubt causes the extension—with the law generally in its relation to various matters coming within the scope, or what the author so considers, of the architectural profession.

Opening with tables of cases cited and lists of Acts of Parliament and legal and other works consulted, the author follows with some general notes upon the position and authority of the architect which are well worth attention. So also is the note as to our professional charges, the Institute Schedule being of course quoted. It is a question worth consideration whether it would not be wise for architects to send a copy of this schedule to all new clients, mentioning that their charges will be as therein stated. This being accepted by the client, disputes could hardly afterwards occur. Whipham *v.* Everitt, 1900, seems to have decided that this schedule is the "customary" scale, although, of course, the schedule has no legal status.

The "conditions" themselves are so mixed up with other matters in the book under review, and the cross references are so frequent, that it is not at all easy to follow what is so clear in the "Conditions of Contract" issued by the Institute, viz., just the exact conditions under which the contractor is bound to carry out the particular works mentioned in the agreement he is signing.

Looking down the Table of Contents of this book, one sees, for instance, "Contractor to visit Site and to make Allowance for all Contingencies," "Hoarding and Fencing-in Site," "Shoring," "Contractor to set out the Works," "Watchmen, Lights and Guard," "Provision for the Clerk of Works' Office"—none of which seem to me to be "conditions" of the contract, but parts of the work to be carried out, and which, therefore, ought to be in the specification.

Various forms of agreement and tender are given, and also a contract form with a house breaker. Some eighteen pages are devoted to definitions of words and phrases used. Among these appear "Agreement," "Architect," "Contractor," "Corporation," "Defendant," "Plaintiff," "Drawings," "Specification," "Tender," "Turnpike Road," "Umpire," "Valuer," and others not so well known. Those quoted might be assumed to be understood by any professional man, one would think. The index is full and excellent.

The book will no doubt be exceedingly useful to any budding barrister or solicitor entering for a prize essay on "The Law relating to Building Contracts." A busy architect trying to live on "5 per cent. and no extras" will no doubt send a shilling to the Institute office and get, ready for immediate use, any conditions of contract and agreement he is lucky enough to require.

C. H. BRODIE.

PERSPECTIVE.

Perspective at sight. R.'s method. 8o. Lond. 2s. 6d. net. [G. H. Tyndall, The Minster Press, Ely; Reeves & Sons, Limited, 4, Farringdon Avenue, E.C.] Large Diagrams for Office Use sold by B. T. Batsford, 94, High Holborn, W.C.

R.'s method of perspective at sight is an ingenious attempt to apply the usual system of perspective drawing employed by architects to the production of tolerably correct sketches and drawings, without the laborious process of setting up the building from plan, or finding the vanishing points. The apparatus consists of a rather small, neat sketch-book, with leaves of semi-transparent paper, perforated for detachment after use; and a number of strongly ruled diagrams to fit the book. In these, points of height are set up to scale and lines drawn from them to vanishing points as required by certain points of view, while the distances, also set up to scale, have vertical lines drawn through them. Six diagrams are supplied, four of which are for external views. There is, in addition, a diagram ruled into squares, intended to be used "for plans, details, and drawing in proportion," as well as a short explanatory pamphlet and a "key to proportions and scales for diagrams." Large diagrams for office use are also to be published.

The "method" consists in placing one of the diagrams under a leaf of the sketch-book, then, viewing the building from the position indicated by the diagram and the key, it is claimed that the delineation of the subject "is made so simple that anyone wishing to draw correctly (*i.e.* in perspective) can start right away, for vanishing lines and diminishing widths are before your eyes." This would be perfectly true, and the "method" would apply admirably, if buildings consisted merely of flat walls; but there is no help to be gained from it for the correct drawing of circular work, bay windows, porches, or other projections, nor for L-shaped buildings, or obtaining the lengths of ridges, or the position of chimney-stacks, dormers, turrets, or other points in a building which are set back from the plane of the front. These must be set up by eye. One drawback in the "method" is that it can only be used on semi-transparent paper.

Indeed, the "method" appears to be of limited application, and most architects will rely on the usual architectural system. A draughtsman ought to be able to draw small sketches in perspective, especially if from actual work, well enough without the assistance of the "method"; and for large and careful studies the ordinary system employed cannot be bettered. The "method," however, may have its uses, when the draughtsman is not very skilled, in aiding him to prepare rough drawings, if the points of view of the diagrams happen to be the best for the building. In sketching actual work it may assist the beginner to correct drawing in such cases as the spacing of an arcade, enriched ceiling or floor, or other subject, in perspective. But to rely on it to teach drawing, and to be an easy way out of the mill of perspective study, is to put it to a use the inventor does not intend, and as such it will do more harm than good. As a stepping-stone to the time when the beginner can sketch without using an artificial aid, especially if backed up by a proper study of perspective drawing, the "method" will fulfil all that could be desired of it, while in the process of design it may help the student to realise the outline and proportion of his group when seen in perspective, though the drawing be of the roughest description.

GEOFFRY LUCAS.

MINUTES. IX.

At a Special General Meeting held Monday, 2nd March 1903, at 8 p.m., Mr. Aston Webb, A.R.A., F.S.A., *President*, in the Chair, with 14 Fellows (including 8 members of the Council) and 16 Associates (including 1 member of the Council), the Chairman announced that the Meeting was convened pursuant to By-law for the purpose of electing the Royal Gold Medallist for the current year, and moved in accordance with notice that Mr. Charles Follen McKim, of New York, U.S.A., President of the American Institute of Architects, be elected for the honour. Whereupon it was

> RESOLVED, *nem. con.*, that subject to His Majesty's gracious sanction the Royal Gold Medal for the promotion of architecture be awarded this year to Mr. Charles Follen McKim, of New York, for his work as an architect.

This concluded the business of the Special Meeting.

At the Ninth General Meeting of the Session 1902–1903, following the Special Meeting above referred to and similarly constituted, the Minutes of the Meeting held 16th February 1903 [p. 220] were taken as read and signed as correct.

The following Fellow attending for the first time since his election was formally admitted and signed the register —viz. John Robert Moore-Smith.

The President, referring to a circular recently issued to architects and others headed "A Government Diploma for Architects," announced that the Council were still opposed to any such scheme of registration as that set forth in a previous Bill dealing with the same subject, but when the details of the proposed Bill were before them and had been duly considered, the Council would be prepared to give their definite views as to the course to be taken.

The following candidates for membership in the various classes were elected by show of hands under By-law 9, viz.:—

As FELLOWS (9).

WILFRID AINSLIE.
SIR ROBERT ROWAND ANDERSON, LL.D., F.R.S.E. (Edinburgh).
THOMAS EDWIN COOPER.
HERBERT DAVIS (Scarborough).
JAMES MACINTYRE HENRY (Edinburgh).
WALTER STIRRUP (Blackburn).
WILLIAM ANGELO WADDINGTON [*A.*] (Manchester).
JOHN HENRY TOWNSEND WOODD, M.A.Cantab.
ARTHUR WILLIAM YEOMANS (Chard, Somerset).

As ASSOCIATES (22).

ROBERT BENNETT [*Probationer* 1898, *Student* 1900, *Qualified* 1902] (Buxton).
WILLIAM EDWARD BROOKS [*Probationer* 1900, *Student* 1901, *Qualified* 1902].
FREDERICK BILLINGHURST CHESTER [*Probationer* 1892, *Student* 1898, *Qualified* 1902].
WALTER ST. LEGER CROWLEY [*Probationer* 1896, *Student* 1899, *Qualified* 1902] (Cardiff).
WILLIAM GREENWOOD [*Ashpitel Prizeman* 1902, *Probationer* 1900, *Student* 1901, *Qualified* 1902] (Blackburn, Lancs.).
JOHN HINDLE HIGSON [*Probationer* 1895, *Student* 1898, *Qualified* 1902] (Blackburn).
JOSEPH HOLT [*Probationer* 1893, *Student* 1898, *Qualified* 1902] (Wilmslow, Cheshire).
CHARLES HENRY HOPSON [*Colonial Examination, Montreal* 1902] (Canada).
HENRY JOSEPH BISSAKER HOSKINS [*Probationer* 1898, *Student* 1900, *Qualified* 1902] (Birmingham).
JOHN IVOR PRICE JONES [*Probationer* 1895, *Student* 1898, *Qualified* 1902] (Cardiff).
JAMES MORTON LETHBRIDGE [*Probationer* 1898, *Student* 1900, *Qualified* 1902].
THOMAS FORBES MACLENNAN [*Special Examination* 1902] (Edinburgh).
THOMAS McLAREN [*Colonial Examination, Montreal* 1902] (Montreal).
CHARLES ERNEST MONRO [*Probationer* 1891, *Student* 1899, *Qualified* 1902] (Glasgow).
GEORGE SALWAY NICOL [*Probationer* 1895, *Student* 1897, *Qualified* 1902] (Birmingham).
CHARLES EDMUND LANCASTER PARKINSON [*Probationer* 1899, *Student* 1900, *Qualified* 1902].
FRANK GEORGE RICHARDSON [*Special Examination* 1901].
NATHAN THOMAS SALMON [*Probationer* 1895, *Student* 1897, *Qualified* 1902] (Reading).
STANLEY TOWSE [*Probationer* 1893, *Student* 1899, *Qualified* 1902].
WILLIAM HENRY WATKINS [*Probationer* 1899, *Student* 1901, *Qualified* 1902] (Bristol).
HORACE WHITE [*Probationer* 1896, *Student* 1898, *Qualified* 1902].
FRANCIS CARR WRIGLEY [*Probationer* 1897, *Student* 1899, *Qualified* 1902].

As HON. CORRESPONDING MEMBER.

CONSTANT MOYAUX, Member of the Institute of France, President of the Société Centrale des Architectes Français, Paris.

The Meeting then proceeded to a discussion of the measure for amending the London Building Acts to be brought forward by the London County Council, and upon the invitation of the President Mr. J. Douglass Mathews [*F.*], Chairman of the Practice Standing Committee, briefly reviewed the provisions of the Bill and dealt with the alterations suggested by his Committee. The impracticable nature of the measure in various respects having also been pointed out by other speakers, the Chairman announced that the Council would take the necessary steps to oppose the Bill should it come before Parliament.

A vote of thanks to the Practice Committee for their labours in connection with the Bill was passed by acclamation. The proceedings then closed and the Meeting separated at 10 p.m.

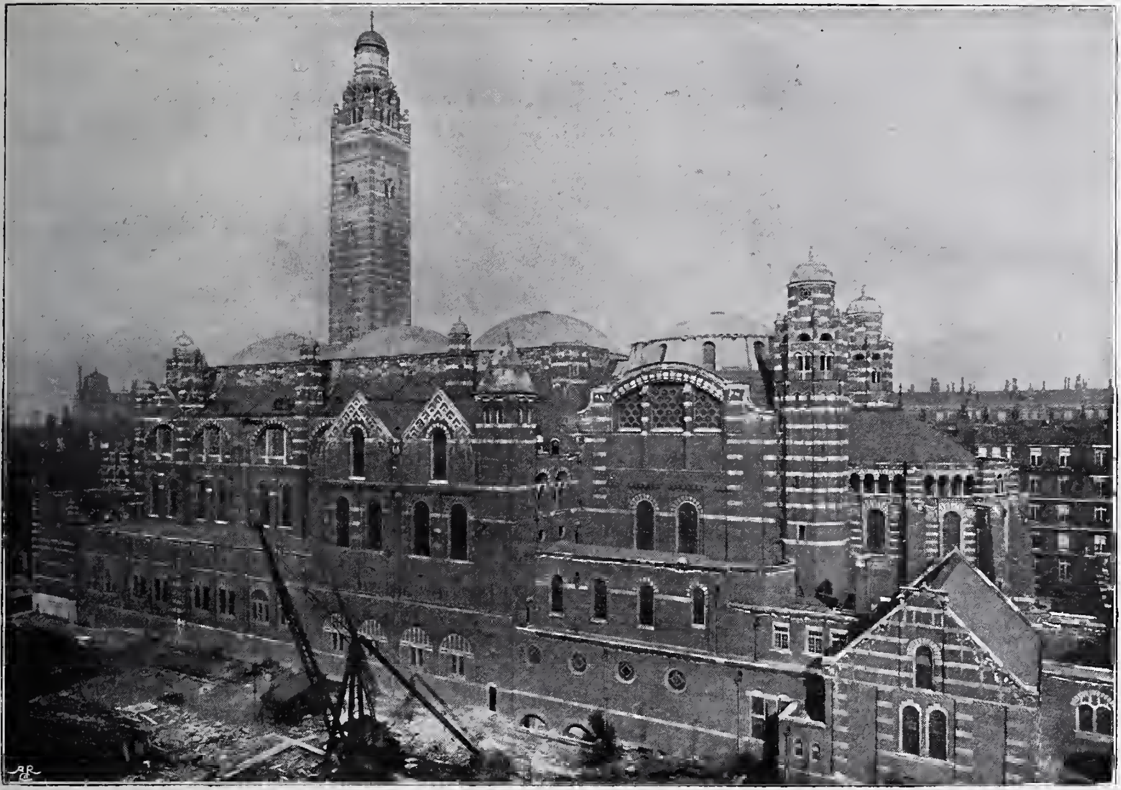

Photo. S. B. Bolas & Co.

WESTMINSTER CATHEDRAL.

By Charles Hadfield [*F.*].

Read before the Royal Institute of British Architects 16th March 1903.

IN the preparation of the Paper which I have undertaken at the request of the Council of the Royal Institute, on a building project of so unique a character as that of the new Westminster Cathedral, some preliminary remarks are obviously called for regarding the conception and carrying out of an undertaking which has been recognised to be "the greatest material expression of religious faith given to England by devout Roman Catholics since the Reformation"*—a work which must be for all time an architectural landmark emphasising the passing of the nineteenth and the opening of the twentieth century.

In the first place let me express a keen sentiment of regret that it has fallen to me here to-night to tell a story that would obviously have been far better told by the late John Francis Bentley, who, like many another distinguished architect, has passed away leaving, alas! a great life's work unfinished.

I own to a feeling that the preparation of a Paper on such a building as the Cathedral in its incomplete condition (the decorative details internally being now only in progress) is a difficult and delicate task. I wish its preparation might have been delayed until the interior scheme of decoration and the accessorial details were more advanced and formed fair subject for comment, as their absence must, perforce, rob the Paper of interest. Nevertheless, I have, with the approval of the late architect's representatives, gladly complied with the Council's request, feeling that I could testify to cherished associations of a friendship of well-nigh forty years with a man whom to know intimately was to love and to admire, and that I could, without intruding my own personal feelings and relations, pay a friend's tribute to his memory.

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* *Pall Mall Magazine*, October 1902.

I do not purpose to-night to enter at length into the historical or even the æsthetic side of the new Cathedral. Its external aspect is already familiar to the architectural public, and the building, considered as a whole, has been the theme of many critics. Contenting myself with an outline of the initiation of the project by Cardinal Wiseman, its further development by Cardinal Manning, and its happy accomplishment by Cardinal Vaughan, I have rather preferred to enlarge on the designer's work from a practical and constructive standpoint—a standpoint from which he himself took pleasure in regarding it.

In the early years of the past century English Catholics were emerging from a condition of obscurity, the outcome of long years of repression and social ostracism. For time out of mind they had been obliged to meet in mean chambers or lowly chapels in back lanes, there to celebrate as best they might those solemn rites for which the stately cathedrals and parish churches of the olden time had been deemed not one whit too glorious; but the dawn of better times was breaking when, on 5th August 1817, the foundation-stone of S. Mary's Chapel, Moorfields, was laid.

The sacred edifice, lately removed to give place to the exigencies of recent times, was of sufficient importance to merit notice and illustration in Britton and Pugin's *London*. The cost is said to have been £26,000, and the opening and dedication service took place on 22nd April 1820. There, in 1836, Nicholas Wiseman—afterwards Bishop, and created by Pius IX. Archbishop of Westminster in the restored hierarchy in 1850—attracted by his learning and eloquence crowded audiences of varying shades of opinion, and roused the Catholic body from a state of desponding lethargy to hope and action. I need not enlarge upon his subsequent elevation as Cardinal and his brilliant career, saving to note that the idea of erecting a worthy cathedral for the metropolitan see of Westminster originated with him during his last illness, a few months before his death in February 1865. On 25th May of that year a public meeting was held at the Hanover Square Rooms in London, which pledged itself to erect the cathedral as a fitting testimony to the splendid services he had rendered to his fellow Catholics. The project was taken earnestly in hand by his successor the late Cardinal Manning, who regarded it as a sacred trust, but stipulated that the education of the children of the poor in his extended diocese would have to be assured on a solid foundation ere a stone of the material cathedral was laid. This noble condition was, needless to say, fulfilled to the letter during many years of effort and self-sacrifice on the part of His Eminence. Meanwhile, in August 1868, after lengthened negotiations, a site of about two and a half acres near Carlisle Place was secured, at a cost of £36,500, and in 1873 the late Mr. H. Clutton [*F.*] was asked to prepare designs for a stately cathedral, 450 feet in length by 250 feet in width, of an Early Pointed style. These designs, owing to a change of site and for various other reasons, remain on paper; and eventually, in 1884, the present Cathedral site, containing about four acres, on a portion of which had stood the Middlesex county prison of Tothill Fields, was acquired for a sum of £55,000.

Cardinal Manning died in January 1892, leaving to his successor the task of raising the sacred edifice. With the advent of His Eminence Cardinal Vaughan, the present Metropolitan, the story of the Cathedral entered upon the second period, to which I now ask your attention.

Before the close of the year 1892 Archbishop Vaughan was appointed to the vacant see, and he received the Cardinal's hat from Pope Leo XIII. early in the following year.

His Eminence, some time after his return to England, issued an appeal to the Catholic episcopacy, clergy and laity, pointing out many grave and weighty reasons why the work should be no longer delayed. Canon law required that a metropolitan see in a country like England ought not to be left without a Mother Church. It was, moreover, fitting and of great import that in the near future the solemn liturgical chants should be daily heard again, after a lapse of over three centuries, in the capital of the British Empire; that such a Cathedral was necessary to enable the metropolitan see to exercise its full legitimate influence and to take its proper place in the religious movement and awakening which was passing over the English people; and, finally, time had strengthened the reasons which had induced the Catholic body to pledge itself in 1865 to build the Cathedral as a memorial of Cardinal Wiseman, and had added to the name of Wiseman that of Manning with a double debt of gratitude. "The Cathedral would, therefore, be a fitting tribute to the memory of his two great predecessors."

The results of this appeal rendered possible an early commencement of building operations, and in May 1894 the question of the designing came on the *tapis*. Fortunately the idea of erecting a great basilican church, an attempt to reproduce old St. Peter's (the Vatican basilica), was abandoned as impracticable after much discussion and varying opinions; and with it, happily, the too prevalent form of procedure by competition.

To the delight of all his friends, after he had expressly declined to compete, Bentley was asked, early in July 1894, to undertake the designing of the new Cathedral. Towards the end of October, after carefully made preparation, he set out alone for the Continent, spending Christmas and some time in Rome in attendance upon Cardinal Vaughan and in studying the basilicas and other historic remains.

Leaving Rome, he visited S. Mark's, Venice, and the group of churches on the Adriatic Coast which had been influenced by the S. Sophia tradition. He did not carry out his intention of going to Constantinople, having satisfied himself with his studies at Florence, Venice, Verona, Milan, and Ravenna. In conversation with a friend, he admitted that the buildings at Ravenna first enabled him to decide on the forms and treatment of what had been in his mind. A letter dated 26th March 1895 announced his return, the previous week, "safe and sound, and none the worse for my many journeyings."

Back again in London, he rapidly put on paper the plan, with an internal area of some 54,848 square feet, of a great Byzantine cathedral which, with the general lines of the design, had been long maturing in his mind; and later an ingenious model was prepared one-forty-eighth the actual size, executed in Kauri pine, which is now at Archbishop's House. The Press gave publicity to the scheme at the time of the foundation-stone laying on 29th June 1895. This ceremony was carried out with every circumstance of ceremonial and impressive observance. The stone, a block of Cornish granite, 5 feet by 3 feet wide, and 2 feet 8 inches thick, was laid at the south-west pier of the sanctuary by Cardinal Vaughan, assisted by Cardinal Logue (who celebrated a Low Mass on the site of the High Altar).

The choice of the Byzantine instead of the Gothic style had been arrived at after much deliberation. It was recognised that even if it had not been desirable to avoid any appearance of rivalry with Westminster Abbey, the question of cost would have weighed heavily against a Gothic design—and that with modern appliances a Byzantine cathedral of brick could be erected within three or four years with the means at command, leaving the marble and mosaic decorations to be added as time went on and the necessary funds were available.

Bentley himself fully concurred in the decision. "It was thought by the Cardinal," he wrote in the *Cathedral Record*, "that to build the principal Catholic church in England in a style which was absolutely primitive Christian, which was not confined to Italy, England, or to any other nation, but was, up to the ninth century, spread over many countries, would be the wisest thing to do. Personally I should have preferred a Gothic church; yet, on consideration, I am inclined to think the Cardinal was right."

He writes in a letter dated 5th July 1895 :—" I cannot say how pleased I am that the 'Basilica' and Italian styles were cast aside. I intend to have few mouldings to the arches, indeed none at all to the great arches that will carry the domes. All the caps and bases will take a new departure, or rather a carrying-on of a very old one, and so with all the other details. I am not attempting a new style, that is impossible; but intend, as far as I am able, to develop the first phase of Christian architecture." In a subsequent letter he says "that his mouldings and carvings are to be few, and the best he can design."

His Eminence has recently publicly expressed his gratification that in general matters he gave his architect a free hand. "Having," he added, "laid down certain conditions as to size, space, chapels, and style, I left the rest to him. He offered me the choice between a vaulted roof and one of saucer-shaped domes: I chose the latter. He wished to build two campaniles; I said one would be enough for me. For the rest he had a free hand."

By the kindness of Messrs. Bentley and Son, whom I have to thank for much valuable information, I am able to exhibit a correct ground-plan, with longitudinal and cross sections. I am indebted to the Editorial Committee of the *Architectural Review* for permission to make use of the photographic illustrations which have appeared in the *Review*, for preparing the lantern-slides.* I show plans also of the churches of S. Sophia and SS. Sergius and Bacchus, Constantinople; of S. Vitale, at Ravenna; S. Zenone, at Verona; of S. Mark, at Venice; and of S. Front, at Périgueux, which churches I am instancing in the course of this Paper.

In the first number of the *Cathedral Record*, issued January 1896, when active building operations were in progress, an article by the Architect enables us to see, from his point of view, the nature of the design, its plan, &c., and it seems to me fitting that I should describe it, as far as possible, in his own words.

After remarking on the genesis and growth of church architecture at the close of Diocletian's reign, he traces the efforts of Constantine "when Christianity was proclaimed to be the State religion, and the seat of empire had been removed to Byzantium," culminating in "the erection by Justinian of that marvellous creation so fittingly dedicated to the Eternal Wisdom: that wondrous expression in material form of the Apocalyptic vision of the Heavenly Temple—the second church of S. Sophia at Constantinople." Passing on to the characteristic features of the Byzantine style and its differences from the Basilican, he proceeds: "What gives the building of this period a pre-eminence, and a greater interest over any other, is that it was the first phase of Christian Art; that it expressed in full the hallowed genius of Christianity, and was the outcome of a sensitive æsthetic people inspired by the Seer of Patmos." He goes on to remark that his plan of the Cathedral is not that of the Eastern Church of the Justinian period, but "an example of what might have been unfolded, had not the decadence of the Roman Empire terminated the growth of congregational requirements in the East." He further says: "From a glance at the plan of SS. Sergius and Bacchus, at Constantinople, or of S. Vitale, at Ravenna, both of about the same age, it is evident that they were arranged from a liturgical rather than a congregational standard, while the Church of S. Mark, Venice, erected nearly four centuries later, indicates a marked advance in the latter direction, showing clearly the course the development was taking." †

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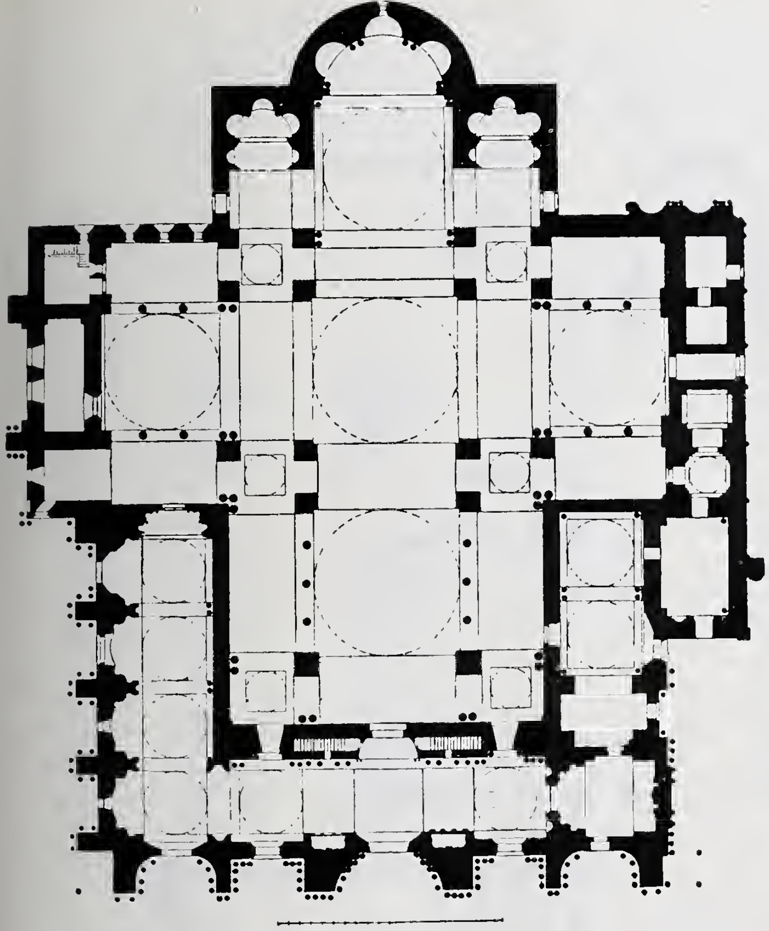
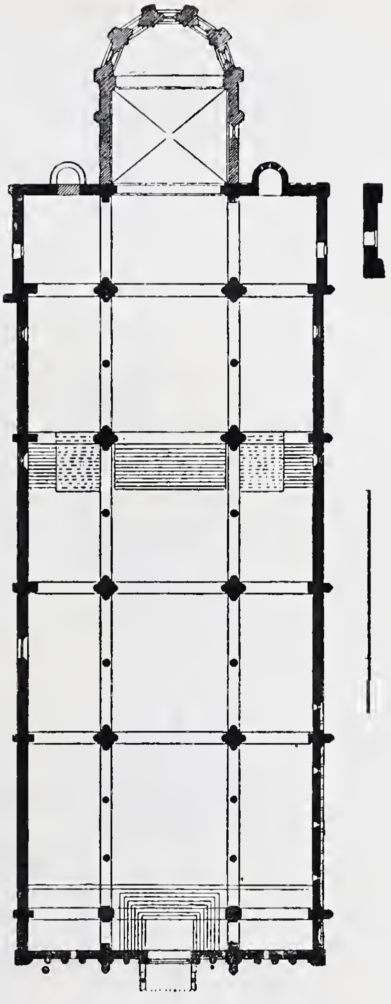
* The Institute is also indebted to the proprietors of the *Architectural Review* for the loan of the blocks of the illustrations on pp. 261 to 264 of this Paper.—Ed.

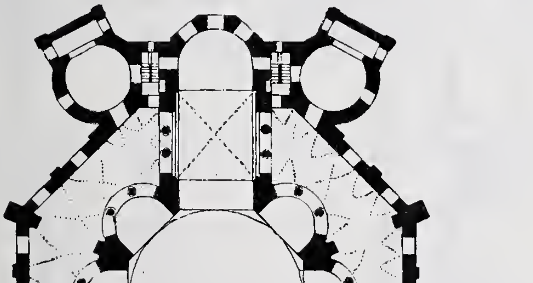
† The planning of the well-known church of S. Front at Périgueux, which was, it is said, erected many years later than the church of S. Mark at Venice, was a further development in this same direction.



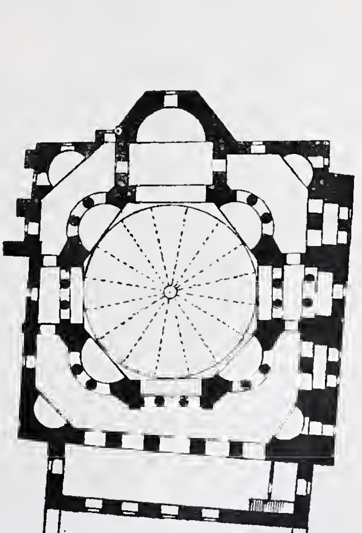
ST. MARK'S, VENICE.



SAN ZENONE, VERONA.

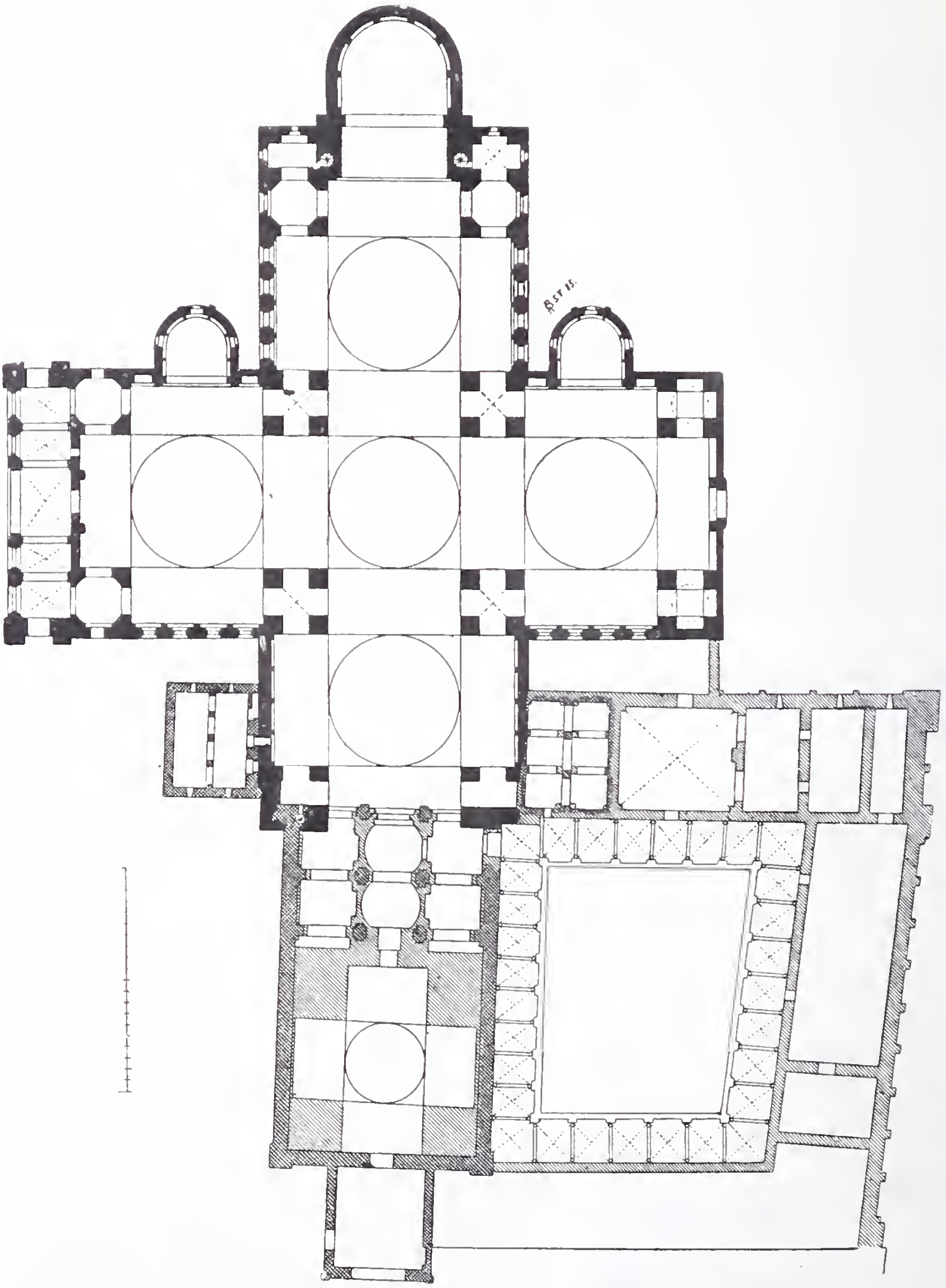


SAN VITALE, RAVENNA.

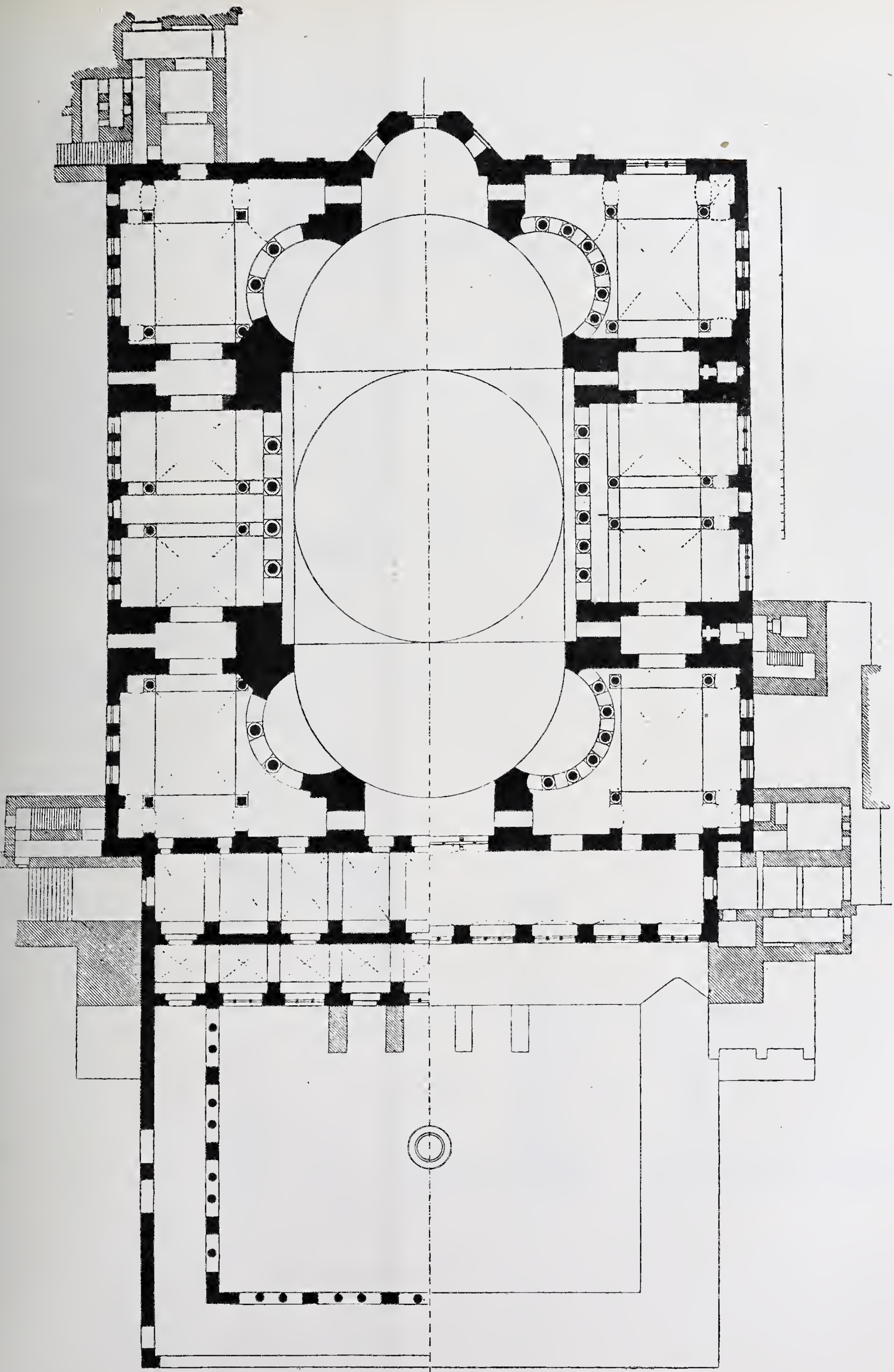


SS. SERGIUS AND BACCHUS, CONSTANTINOPLE

These remarks of the Architect, I submit, indicate, as the President pointed out so lucidly in his Opening Address this Session, that at Westminster the problem to be solved was different from that required by the traditional Gothic plan of a great cruciform church, and this difference has naturally affected the whole design. And the President has told us "that in providing an enormous uninterrupted area"—a nave 60 feet wide, and some 200 feet long,



SAINT-FRONT, PÉRIGUEUX.



ST. SOPHIA, CONSTANTINOPLE.

surrounded by galleries and with processional aisles, accommodating a large number of worshippers—"the Architect has not forgotten the mystery so necessary for a religious building, which he has preserved by the careful lighting, the simple intricacy of its piers, its arches, its ambulatories, and its chapels."

That the problem has been successfully solved may be assumed not merely on studying the plan, but by the acknowledged fact of the excellent acoustic properties of the building, and the lighting, which stamp its fitness for great assemblies and for the celebration of solemn rites and functions, making it the "shadow of a great rock in the desert," a home and haven of refuge for God's poor.

The plan is doubtless familiar to most of my audience, and the illustrations given show the disposition of the general parts of the plan, and also the fact that the church is not orientated, the axis of the choir being turned to the SSE. This was demanded by the exigencies of a valuable site and surroundings, and by ruling considerations of cost, lighting, and the like; and it is moreover in accordance with Roman precedent, where churches had to follow the lines of existing streets and ways, a condition equally fulfilled in our densely crowded metropolis.*

An important factor in deciding the levels and lie of the foundations, crypt, &c., was the existence of a platform of concrete 9 feet thick, the foundations of the old prison, which underlies a portion of the site in a diagonal line drawn from the *north* jamb of the great

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The following Comparative Table of the Twenty-one Ancient English Cathedrals and Westminster Abbey is taken from the *Westminster Cathedral Record*, January 1896. The total areas down to Lichfield (inclusive) are as given in Fergusson's *History of Architecture* (London, 1893). The *breadths* and *heights* of the naves are from Britton's *Dictionary of the Architecture and Archæology of the Middle Ages* (London, 1838). The nave *lengths* are measured from west end to rood-screen, and are taken from *The Cathedrals of England and Wales* (*Builder* Series, 1894):—

NAME.	TOTAL AREA.	NAVE.			NAVE AND AISLES.	HEIGHT.
		Length.	Breadth.	Area.	Breadth.	
WESTMINSTER CATHEDRAL	54,848 sq. ft.	234	60	14,040	150	109
York	72,860 „	251	43	13,244	110	93
Lincoln	66,900 „	225	37	8,767	78	81
Winchester	64,200 „	245	32	10,272	88	78
Westminster Abbey	61,729 „	165	30	6,810	68	105
Ely	61,700 „	281	30	8,430	74	72
Canterbury	56,280 „	214	27	6,156	73	80
Salisbury	55,830 „	243	32	8,096	78	81
Durham	55,700 „	235	37	9,694	82	70
Peterborough	50,516 „	195 †	35	10,220	79	73
Wells	40,680 „	193	32	7,424	70	68
Norwich	40,572 „	200	28	6,524	70	75
Worcester	38,980 „	213	30	6,150	78	67
Exeter	35,370 „	167	31	3,906	72	66
Lichfield	33,930 „	173	26	4,888	66	58
Bristol	27,280 „	158	31	4,928	69 ‡	54 ‡
Carlisle	16,350 „	—	—	—	72 ‡	—
Chester	39,725 „	180	41	6,724	84	—
Chichester	35,320 „	152	26	4,680	100	65
Gloucester	31,360 „	163	33	6,435	85	68
Hereford	33,073 „	154	28	4,480	70	63
Oxford	15,782 „	82	22	1,804	53	45
Rochester	21,950 „	145	32	5,504	73	54

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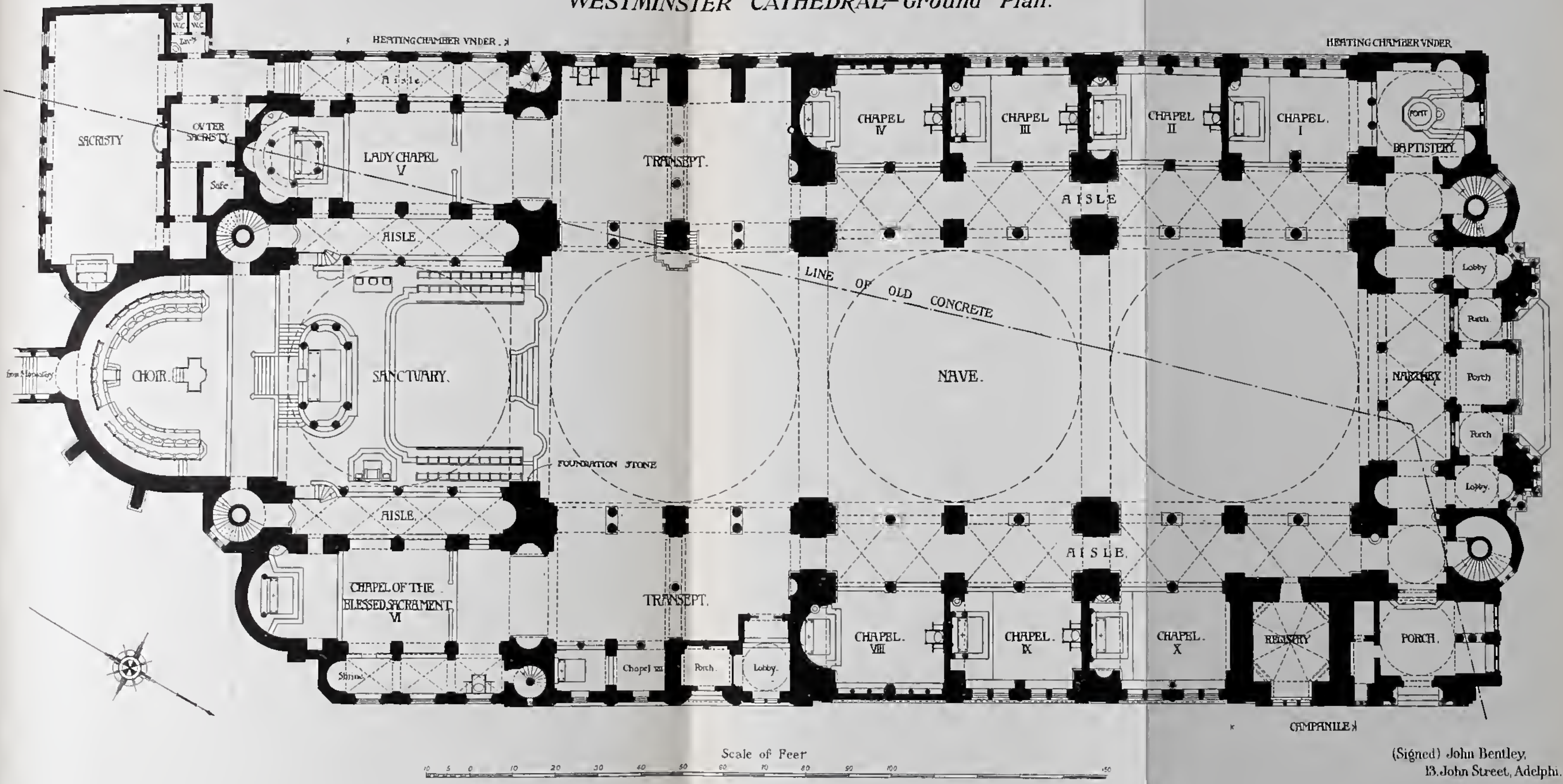
* Although the Cathedral plan is not orientated, the words *North*, *South*, *East*, and *West* are retained in the description for the convenience of readers of the Paper.

† Line of present stalls.

‡ Choir.

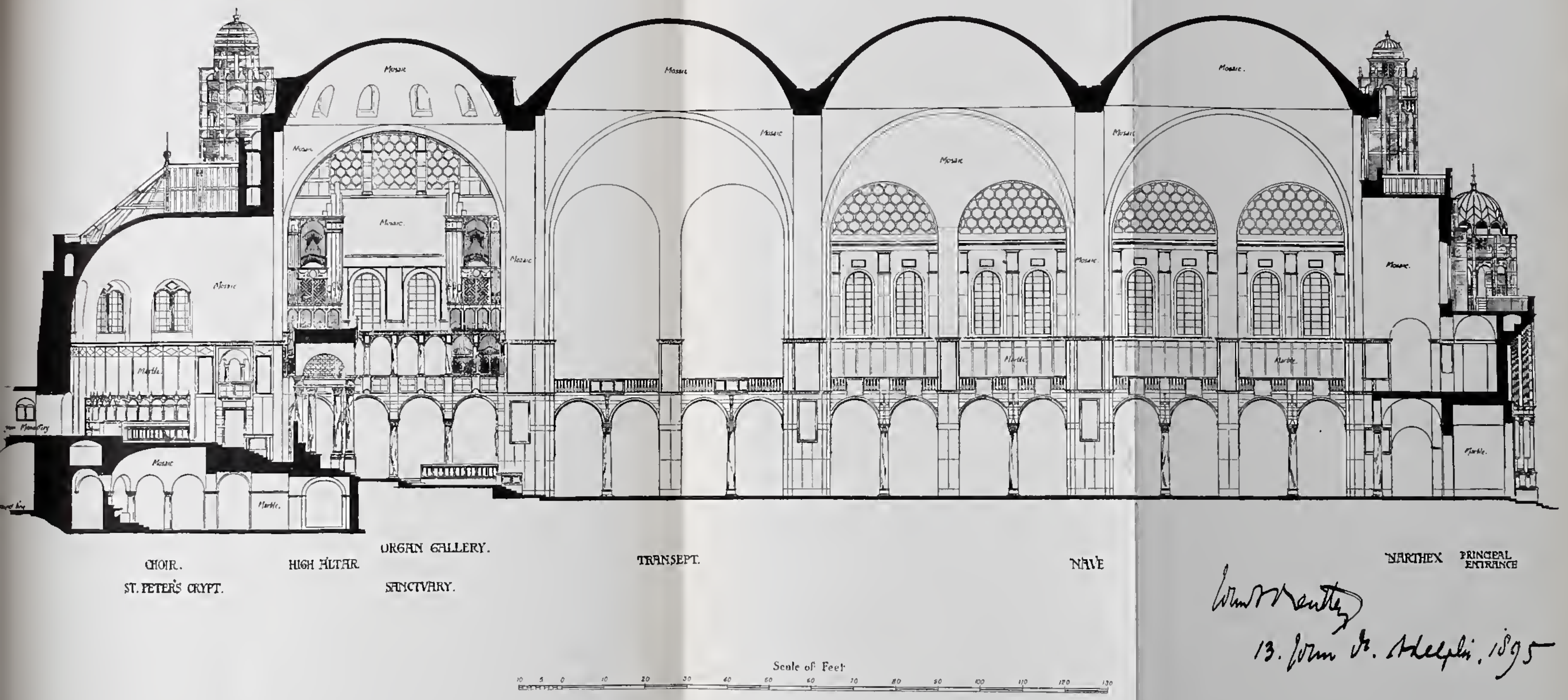
WESTMINSTER CATHEDRAL—Ground Plan.



(Signed) John Bentley,
13, John Street, Adelphi.

C F KELL & SON, PHOTO-LITHO, 8, FURNIVAL ST HOLBORN, E.C.

WESTMINSTER CATHEDRAL—*Longitudinal Section.*

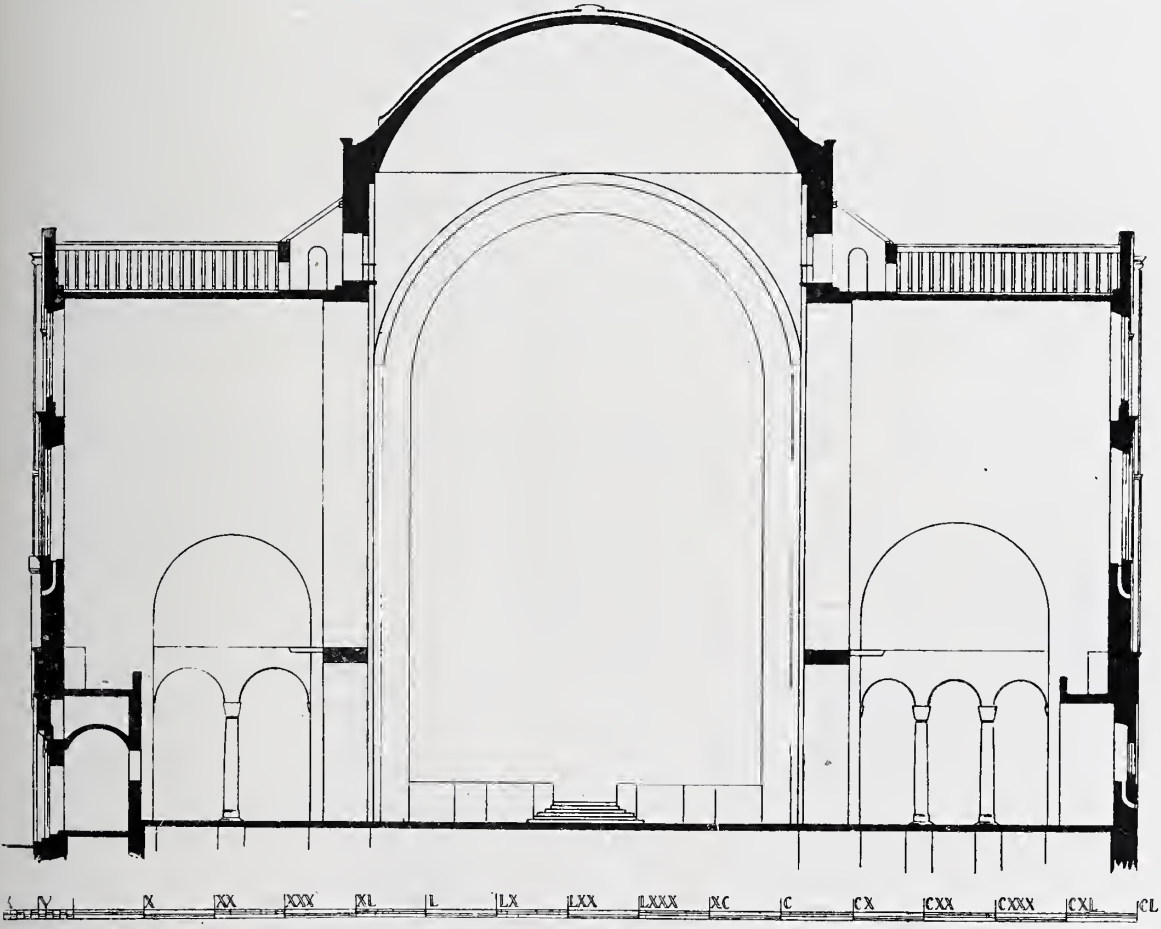


John F. Bentley

13. John St. Adelphi. 1895

C F KELL & SON. PHOTO-LITHO. 8 FURNIVAL St HOLBORN E.C.

entrance portal, to the south pier of the sanctuary arch, as marked on the plan. It was some 100 years old, very hard and solid, and lay beneath the whole of the Archbishop's House at the Ambrosden Avenue corner. I do not propose to deal with this residence in my Paper, except in passing to point out that it is a building of striking, though quiet, design, in perfect harmony with the Cathedral itself, from which it is approached by a cloister, and that it includes a large chapter-hall, galleries, and suites of reception-rooms, with residential accommodation for the Archbishop and the Cathedral staff. It, too, has flat roofs, but they are not supported by vaults.



WESTMINSTER CATHEDRAL: SECTION THROUGH TRANSEPTS LOOKING EAST.

Externally the Cathedral has an extreme length of 360 feet and a width of 156 feet; the height of the nave being 117 feet; height of the façade (not including the turrets), 99 feet; height of the campanile, 284 feet. Internally the dimensions are, from the main entrance to the Sanctuary, 232 feet; depth of the Sanctuary, 65 feet; and of the raised choir beyond, 45 feet; making a total internal length of 342 feet; width of Nave, 60 feet; width across the Nave and Aisles, 98 feet; and across the Nave, Aisles, and side Chapels, 148 feet; height of the main arches of the Nave, 90 feet; and to the crown of the domes, 112 feet. The whole building covers an area of about 54,000 square feet [see comparative table, p. 256].

The Architect's leading constructive idea has resulted in a great building of brickwork, set in cement mortar, covered by homogeneous concrete domes, vaults, and flats, &c., without recourse to the use of steel or iron work, and with a sparing use of oak timber in the roofs of the apsidal Choir and the Transepts, and of teak in the upper stage of the Campanile, with a provision for the gradual completion of the interior by lining it with marble up to a height of 40 feet, and above that with decoration of mosaic work. The following extract from a letter, dated 13th January 1902, emphasises the Architect's strong convictions on the question of girder-composite construction: "I feel that the old principle of construction is carried on, and that curse of modern construction and source of decay—the use of iron (or steel)—has been avoided against the consensus of opinion expressed by the engineers; thus much I am proud of, for I feel that a service to building has been effected, and that I have disproved, and broken the backbone of that terrible superstition, that the use of iron is necessary to long spans."

In the earlier stages of the undertaking Bentley's experimental tests of concrete and bricks were painstaking and exhaustive. It was ascertained that the best core for the concrete of the domes, and for general bearing purposes, was clean, hard brick refuse from the brickyards, broken to a walnut gauge, that Portland-stone chippings were more suitable for the concrete filling of haunches and domes, and Thames ballast for foundation work. The use of old brickbats or coke breeze he discarded because he had found that both tended to kill or starve the cement.

The external architectural appearance of the Cathedral has been the subject of varied criticism by the Man in the Street, but it has been generally appreciated by architects as noble and dignified in its features, striking in its sky-line, evincing knowledge and mastery of composition on the part of the designer, and originality of no ordinary merit. And I venture to urge that, looked at internally or externally, it must be admitted that the conditions imposed on the Architect to design a monumental building capable of being quickly erected, without excessive cost, have been loyally accomplished.

The total expenditure to 25th July 1902 amounted to £162,871, and of this sum £14,800 had been spent up to 31st October 1896 for preparing the site, for laying the foundation-stone, and for excavation and foundations. It is noteworthy that the vast amount of work was completed in spite of a troublesome strike of the bricklayers and labourers, causing a delay of some weeks' duration in the early portion of the year.

At this stage some particulars of the materials used since the commencement of active building operations in the summer of 1895 seem not inappropriate. They were regarded by Bentley, true master-craftsman as he was, with lively interest.

The excavations of the site were executed by Messrs. John Mowlem & Co. They extended to a length of about 375 feet, and to a width of about 170 feet, and to a depth in parts of about 20 feet. For the foundations of the Campanile over 1,300 cubic yards of earth had to be moved, and for each of the five main piers carrying the domes, and continuing as side walls of the chapels, a space 61 feet by 21 feet and 19 feet deep, making a total for these five piers of 4,500 cubic yards. The total weight of the earth removed in the excavations was over 10,000 tons, and about 16,000 cubic feet of timbering were made use of.

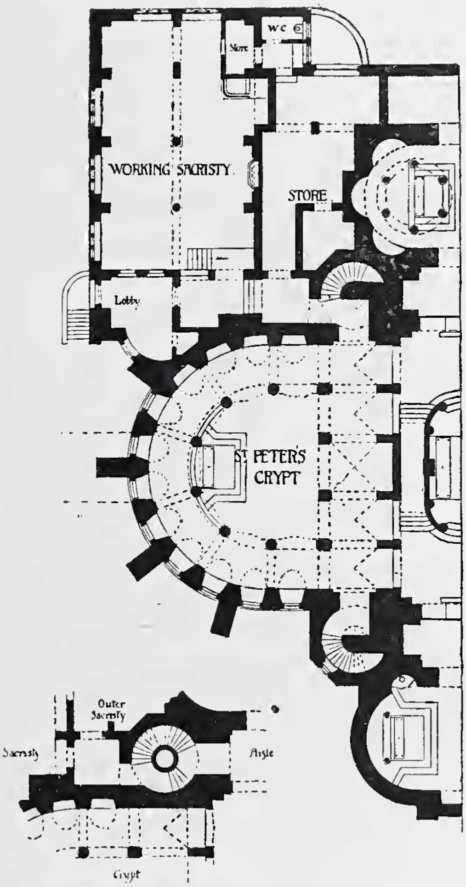
Four thousand cubic yards of new concrete, weighing 6,000 tons, exclusive of the immense mass in the old 9 feet thick bed above mentioned, were filled into the foundations at the south side and west end. The concrete was composed of Thames ballast and Portland cement in the proportion of five parts of ballast and one of sand to one part of cement, accurately measured apart and mixed together on a clean-boarded platform after being turned over dry into a heap, and then again into a second, and finally a third heap, to secure thorough admixture, water being carefully added from a watering-pot during the third shovelling to ensure adhesion; the whole was then barrowed, thrown into the trenches in 2 feet layers, and levelled up to receive the brick footings.

The cement was subjected to careful preliminary experiments, being made up in boxes with varying proportions of Thames ballast, and the result awaited. The Architect finally decided to use cement made by Messrs. Trechman, Weekes & Co., "the best Goliath brand." This cement is ground so fine that the residue on a sieve of 5,800 meshes to the square inch will not exceed 10 per cent.

Briquettes kept for twenty-eight days for testing purposes (during the last twenty-seven immersed in water) at the expiration of that time sustained a tensile strain of 550 lb. to the square inch. Over 600 tons of this cement were used, which was on delivery, being too hot for work, placed in a shed and a current of air allowed to pass over and through it, to await the Architect's permission before use. The footings and brickwork of the foundations up to the ground level were entrusted to Messrs. Perry & Co., of Bow.

The brickwork of the footings was double the width of the walls above, the concrete below extending from 1 to 2 feet outside. Two million and more bricks were consumed in the foundations.

Before the brickwork was begun the Architect carefully tested the many samples submitted to him, finally deciding to use Faversham stocks for the lining of the interior behind the future marble and mosaic work. Thin Bracknell red-facings (under 2 inches thick) were used for the exterior, Fletton wire-cut bricks for the large piers and the walls, Poole wire-cut bricks for the smaller piers, and hard vitrified blue Staffordshire bricks for the outside facing of the underground vaults and sacristy, and for the damp courses, set in nearly neat cement. No machine bricks have been used. English bond was adopted generally—the outer facing excepted.



PLAN SHEWING ENTRANCE TO SACRISTY FROM SANCTVARY AISLE

PLAN OF THE CRYPT.

The mortar was composed of Portland cement, "Goliath brand," and clean, sharp Thames sand, mixed in the proportion of one to three. The courses, averaging four to the foot in work, were well rubbed in and flushed up solid as work proceeded, with a good substantial mortar-joint throughout.

The brick tests, carried out with the assistance of Messrs. Kirkaldy, showed the following results :—

Four parcels marked A, B, C, and D, each containing six Fletton bricks, and one parcel (marked E) containing six Poole bricks, were dealt with. Each brick was flushed true on the upper and lower bed, and was bedded between strips of pine $\frac{3}{8}$ inch thick. They were then subjected to a gradually increasing thrusting stress, with the following result :—

In the mean "slightly cracking stress" of the twenty-four Fletton bricks, the resistance stands at 185·6 tons per square foot, and in that of the six Poole bricks at 398·6 tons per square foot. Under similar circumstances the ordinary London stock would have cracked, it is stated, with one-third the load of the former. The blue Staffordshire bricks resisted pressure up to 700 tons per square foot, and are impervious to moisture.

The exterior (thin brick) walling was bonded to the backing with one course of binders to four of stretchers—without the use of quarter bats. The joints were raked out during progress and pointed with a bold weathered joint as the scaffolding was removed. Rubbing down and scraping of stonework and brick facing were not permitted. For internal facing, stock bricks were used, being a material best adapted for adherence when coated with the bedding for decorative work.

In regard to the masonry, many different varieties of the best hard freestones had to be considered; those of Northamptonshire and Rutland came under notice, but eventually considerations of cost and a ready supply made it manifest that a strong Portland stone from the Brown bed was the best for the external dressings. A high plinth of fine-axed Penrhyn granite, in courses, set with a bold open joint, was placed at the ground level to resist the injury from traffic, forming a dignified base to start the brickwork from. Granite has been used for doorways and elsewhere with the same intent.

The domical construction, the direct outcome of the Architect's plan, cost him much thought and exercise of the inborn Yorkshire caution which characterised him through life. At one period his idea had been to save much centering, by using cast segments of a sphere and building them up into domes. This, no doubt, was a practical constructive scheme, but probably it would have had a tendency to thrust outwards, and it was by degrees that he came to abandon this method for that of a homogeneous mass of concrete thrown on to a *centering* * (really the expensive part of the method). I submit that this outlay has been proved to be true economy, both in the light of results obtained and, possibly, of the outlay incurred. Had his first idea been carried out, the construction might have been a less perfect one than that of the dome of S. Vitale, Ravenna (*i.e.* a spiral coil of earthenware tubes with grooved socketed joints and old amphoræ set vertically); and, moreover, liable to the constructive failures which the history of our craft tells us have occurred time after time since the age of Justinian.

The *Cathedral Record* of May 1899 announces the letting to Messrs. Shillitoe and Sons of the domes and vaulting. By the 15th November the first centre was struck, and three were concreted, and on visiting the works in May 1900 I found the first of the nave centres had been removed, that a second was in process of removal, and the third fixed for the last or westernmost dome; the whole being practically completed at the time of the visit paid by the Congress of Architects in July of that year.

I have alluded above to the composition of the concrete, which was four parts, by careful admeasurement, of clean broken brick well saturated with water before mixing, and one part of cement, in which operation watering was stinted. The mixing was done on a stage set round the domes, and the concrete was thrown on to a close-boarded centre, previously sanded to prevent adhesion, in rings from 3 feet to 5 feet deep screeded on the upper surface to a graduated thickness, to ensure absolute uniformity in longitudinal and latitudinal section. The internal diameter is 60 feet, with a sectional thickness of 3 feet diminishing towards the crown to 13 inches, and the weight of each dome is about 700 tons. The skew-backs or seatings of the pendentives were formed with corbel courses of old granite and York stone. Drain pipes were worked into the haunches for ventilation during construction, and radiating rims or gussets of concrete formed on the extrados at intervals, to carry the artificial-stone covering

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* The centering was constructed with uprights standing on stout planking from the floor level, which said uprights supported radiating trussed principals.

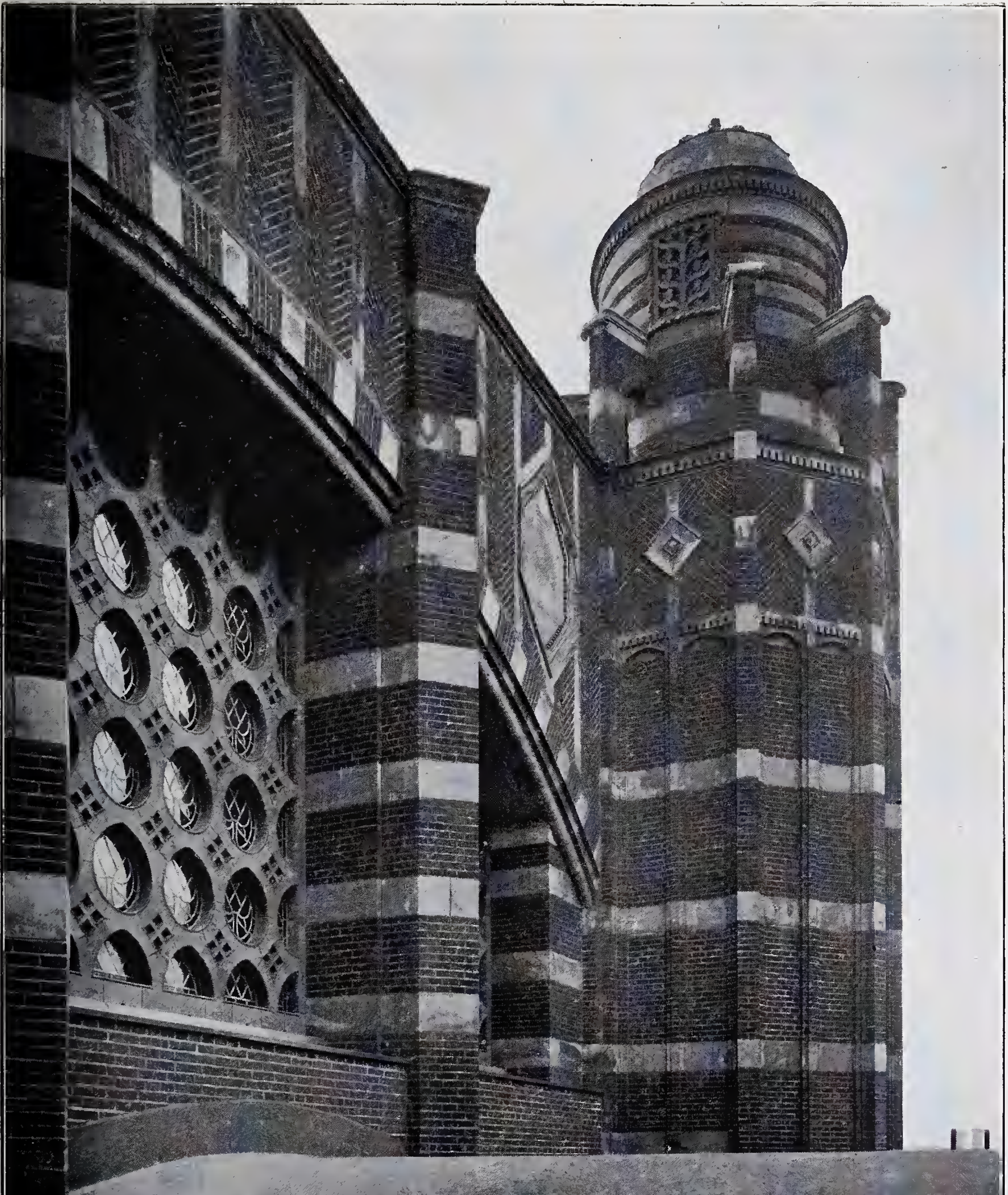
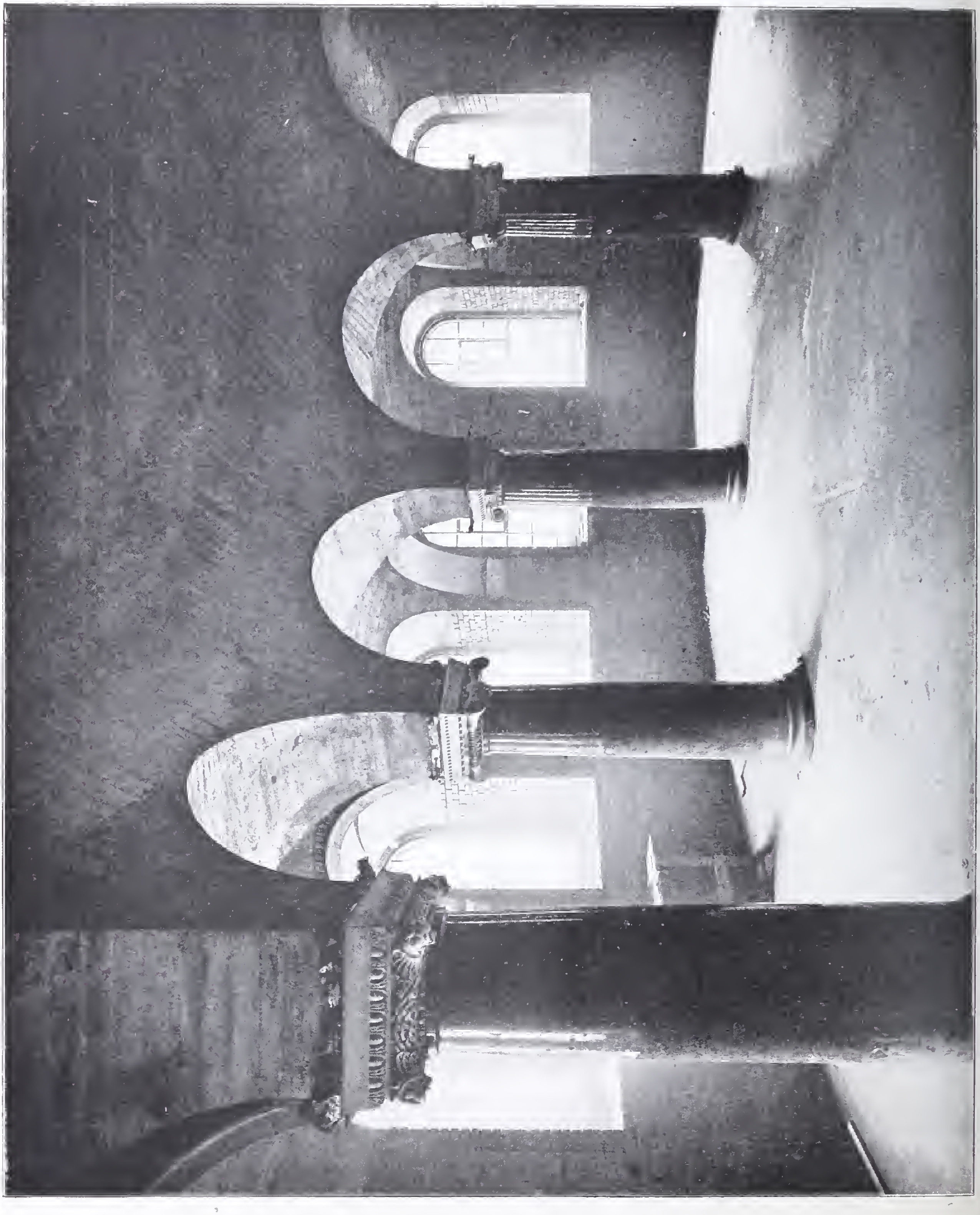


Photo. E. Dockree.

SOUTHERN HALF OF WEST WINDOW OF NAVE, FROM ROOF OF PORCH.



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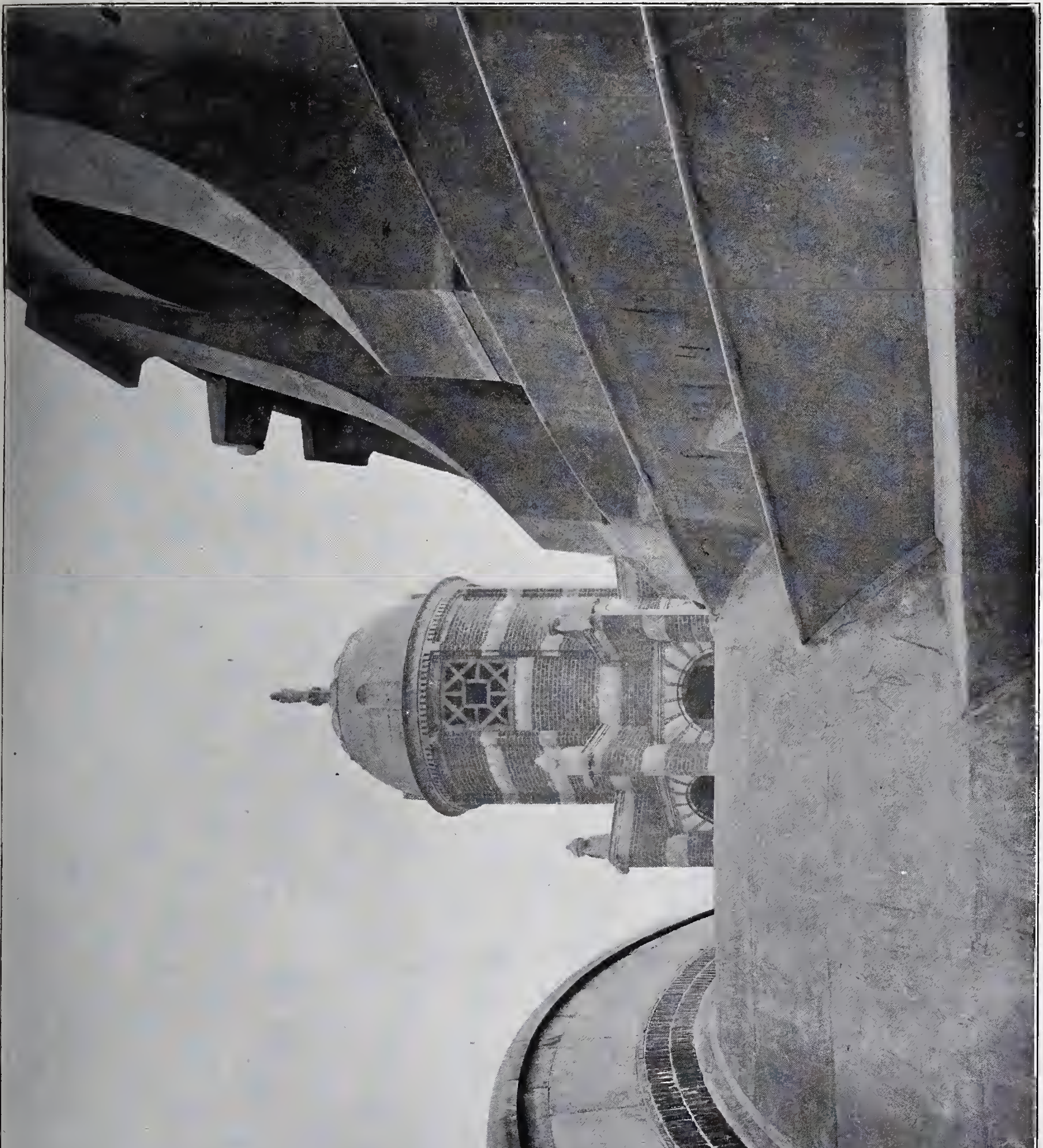
THE CRYPT.



VIEW FROM NORTH-EAST CORNER OF NAVE, LOOKING EAST, AND SHOWING STEPPING TO DOME OVER SANCTUARY.

Photo. E. Dockree.

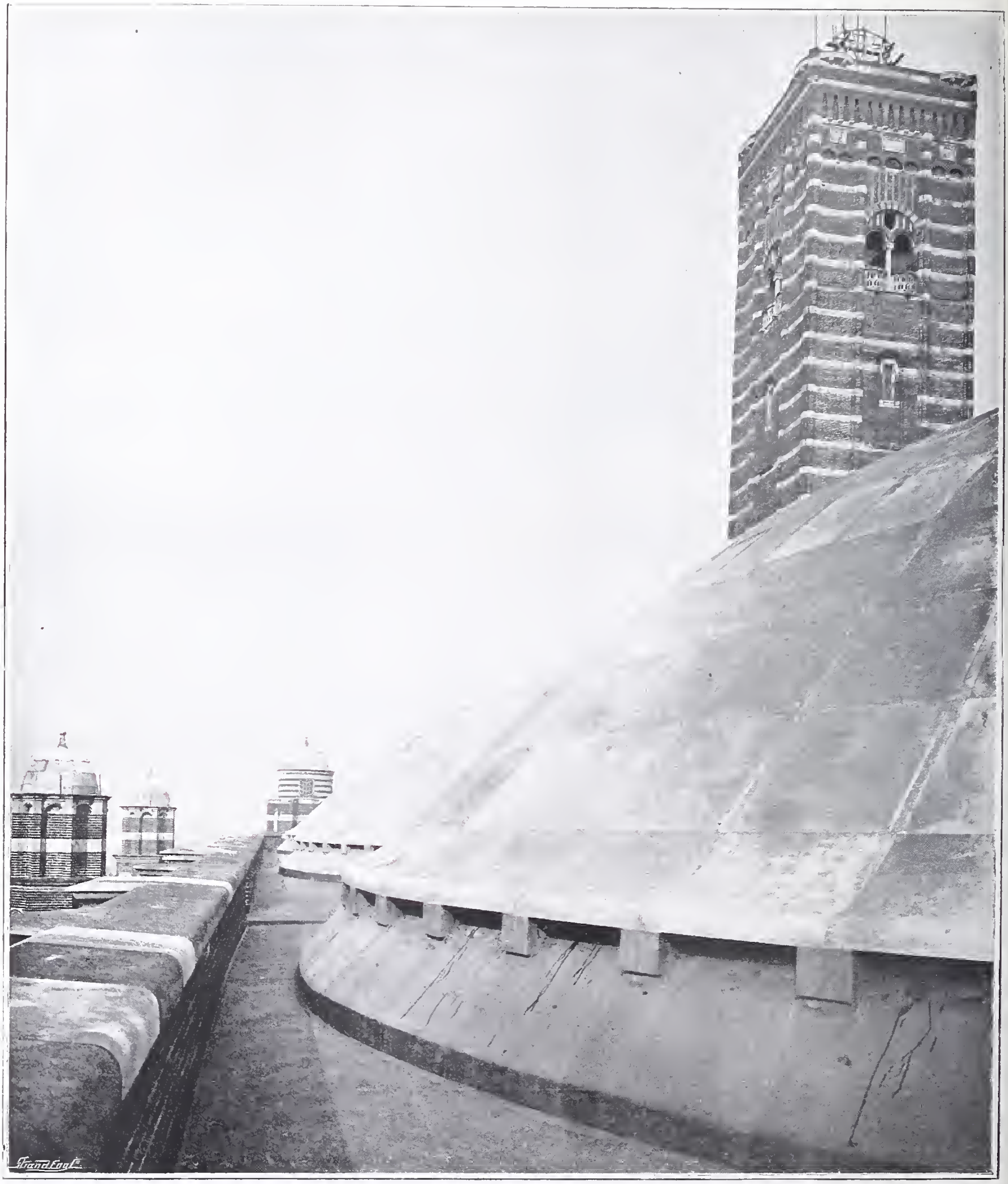


Photo. E. Dockree.

GENERAL VIEW OF DOMES OVER NAVE, LOOKING WEST.

3 inches thick, which has a rebated system of watertight jointing, and an air-space of 2 inches through-ventilated between the inner surface and the last named. The Sanctuary dome alone is pierced, and there are twelve windows encircling it, with an ingenious system of counterforts flanking each opening. When the great arch supporting the dome over the upper Choir had been completed, the brickwork was found to have risen from the centering 1½ inches, whilst in the arcs doubleaux of the Nave, spanning 10 feet more, it was found to have risen but ½ inch. In the mortar of the former, cement some six weeks old had been used, and of the latter, nine-weeks' old cement. After this experience the Architect decided not to sanction the use of any cement until it had been stored in well-aërated bins on the works for three months, periodically turned over, and the temperature regularly taken before mixing up for use.

The marble monolithic columns are an important portion of the general scheme of colour decoration in the Cathedral, and call for special notice. Great care, skilful research, and a large outlay have been incurred in procuring them. They have been presented by many benefactors. To begin with, in S. Peter's crypt round the apse below the retro-choir they are of red Norwegian granite, with varied capitals of Hopton wood marble, and Derbyshire marble bases.

The columns on either hand of the nave, twenty-nine in number, with capitals of Carrara marble, are of verde antico from the classical quarries lately reopened at Larissa in Thessaly; Greek cippolino from the Island of Euboea; Swiss cippolino from Saillon in the Rhône Valley; Languedoc; Italian breccia from Seravazza; grey granite from Norway; and the red granite which is not unlike ancient porphyry. These shafts, 13 feet long, each stand on a moulded base of Norwegian granite. The columns dividing the aisles of the Blessed Sacrament and Lady-Chapels from the sanctuary are of jasper and red Norwegian marble of lovely colour and figure. There are fourteen columns of pavonazzo in the Sanctuary galleries.

The capitals are delicately sculptured, each varying in design, and were fixed in position after the main arches carrying the domes were completed and the superincumbent weight had taken its proper bearings. The Baldachino above the High Altar, on the design of which Bentley bestowed much care, will be constructed of statuary inlaid with mosaic; and it will be supported by eight superb monoliths of onyx, 15 feet in length, procured from Africa after long search and inquiry. It is noteworthy that the classical quarries of Thessaly and the Island of Euboea were rediscovered—the former by Mr. Wm. Brindley, at the close of the nineteenth century—in time to supply the new Cathedral as they had supplied Justinian's great church in the sixth century. I learn from Messrs. Farmer and Brindley that the columns of verde antico were most probably the first extracted since the quarries were worked for the Emperor Justinian in the sixth century. A number fell into the hands of the victorious Turkish troops during the late war, and were only released after peace had been proclaimed. The Architect is said to have obtained sixty specimens of marbles from various parts of the world.

The leadwork, by Messrs. Matthew Hall & Co., of the rain-water pipes and heads, the roofing of the turrets, campanile, &c., is, as well as the lead window-glazing, noteworthy. Cast lead has been used throughout, and the roofing and ridges are wrought with welted rolls, while the finials have the individuality inseparable from Bentley's work. For many years he had been an adept at the designing of leadwork of all kinds, and the weight of metal used promises a durability worthy of the fabric. The windows are glazed with roundels and white translucent glass, with strong pattern leading. Stained glass has been excluded because it was considered that it would be prejudicial to the lighting and out of harmony with the decorative scheme of the interior.

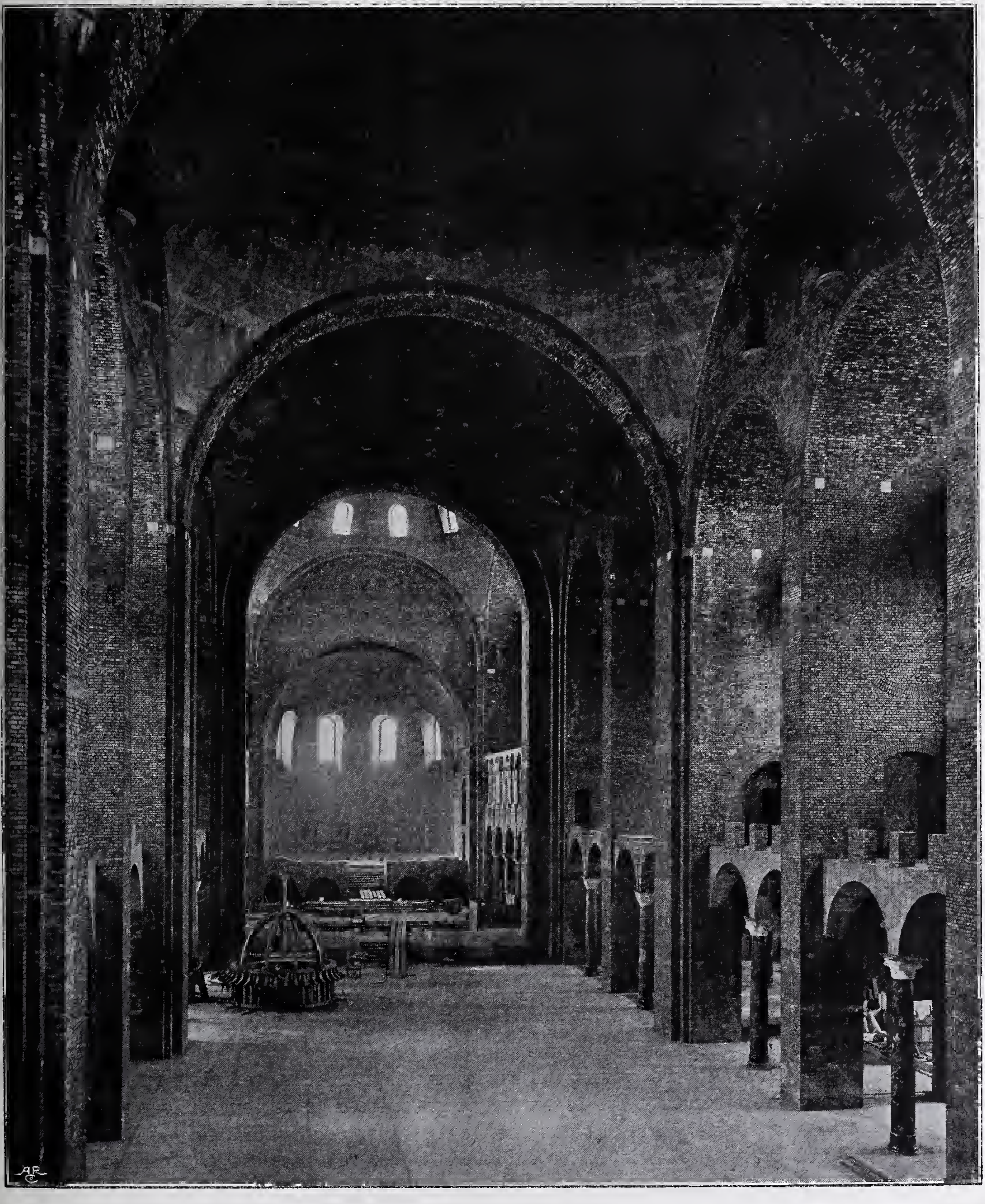
The steps of the spacious circular newel staircases which give access to the crypt, galleries, and roofs, and to every portion of the Cathedral, are made of hard artificial stone, composed of Portland cement and crushed granite, supplied by Messrs. Ward & Son and Messrs. Bennett & Son. They were cast in moulds and then immersed in a silicate bath, and the outer covering slabs of the domes are of a like material, which is much harder than stone, and impervious to moisture. The steps are carried by a central brick newel, and are pinned into the walls. The flats and gutters about the domes and roofs are substantially laid with the Val de Travers Company's asphalte, and precaution has been taken to collect together the large quantity of rainfall which must gather on so extended an area, and to run it off rapidly into the capacious lead rainwater heads and conductors to the drains, which have also had especial attention. In the large windows Doulton terra-cotta tracery, or lattices, of varied and piquant design have been made use of.

The Architect gave consideration to the heating arrangements of the Cathedral, as well as to the electric lighting; taking, it is said, much interest in both from the outset. The former is by hot air on Haden's system, to be supplemented by low-pressure steam-pipes in the galleries. The total cubical space to be warmed is some 3,100,000 cubic feet. Two spacious heating-chambers are provided in the basements of the Blessed Sacrament Chapel, and of the Baptistery. The Nave will be lighted by electroliers suspended at intervals from the iron balconies in the centre of the gallery arches.

Having described the materials used in the foundations and general structure, and the procedure in carrying out the work, it remains for me to add that at the close of the year 1896, when the foundations were practically completed, competitive tenders by schedule were obtained for the superstructure from a number of well-known building firms. After due consideration, Cardinal Vaughan accepted the offer of Messrs. Shillitoe and Son, who signed the contract on 5th November and immediately commenced the work. They were subsequently entrusted with the construction of the domes and the completion of the Campanile, &c., the works being measured and paid for at regular intervals.

It is now time that I should notice the general design of the interior and exterior of the Cathedral, arising as they do out of a final consideration of the plan; and after occupying your attention a few moments longer, I propose to conclude my Paper with the lamented decease of the architect on 2nd March last year. It does not appear to me to be fitting to attempt to describe the works of decoration and internal fitting which have been going forward in the interval, as some of them are probably under consideration, and matter merely of discussion between the Cathedral authority and those directly concerned in carrying them on.

I have, earlier in the Paper, Sir, alluded to your views of the artistic results of Bentley's planning, the simple intricacy of its piers, arches, and the like, and I wish to draw your attention to a charming arrangement of the nave arcading—a favourite one with its Architect, who made use of it in his churches at Watford, Brixton, and elsewhere. I refer to the continuous treatment of the arcading along the full length of the Nave to the Sanctuary arch, without ignoring the crux arrangement of the Transepts, which are thereby invested with increase of interest and mystery. This contributes to the perspective and proportion of the interior in a marked degree. In adopting it, a writer in the *Tablet* of a series of articles on "Byzantine Architecture and the Westminster Basilica" (No. VIII.), "The Architect's Choice," 9th February 1901, points out "that he has avoided mistakes made at the churches of S. Sophia, Constantinople, and S. Mark, Venice"—in both churches the disposition of the windows in the tympanum of the great circular arches being bald and unsatisfactory, and the galleries in the former cutting across the space between the piers tending to dwarf the front arches which support the domes. Bentley has constructed coupled arches 25 feet in span, 72 feet 5 inches in height, within 60 feet archivolts carried out on a grand scale, which give the



NAVE LOOKING SOUTH FROM GALLERY.

Photo. S. B. Bolas & Co.

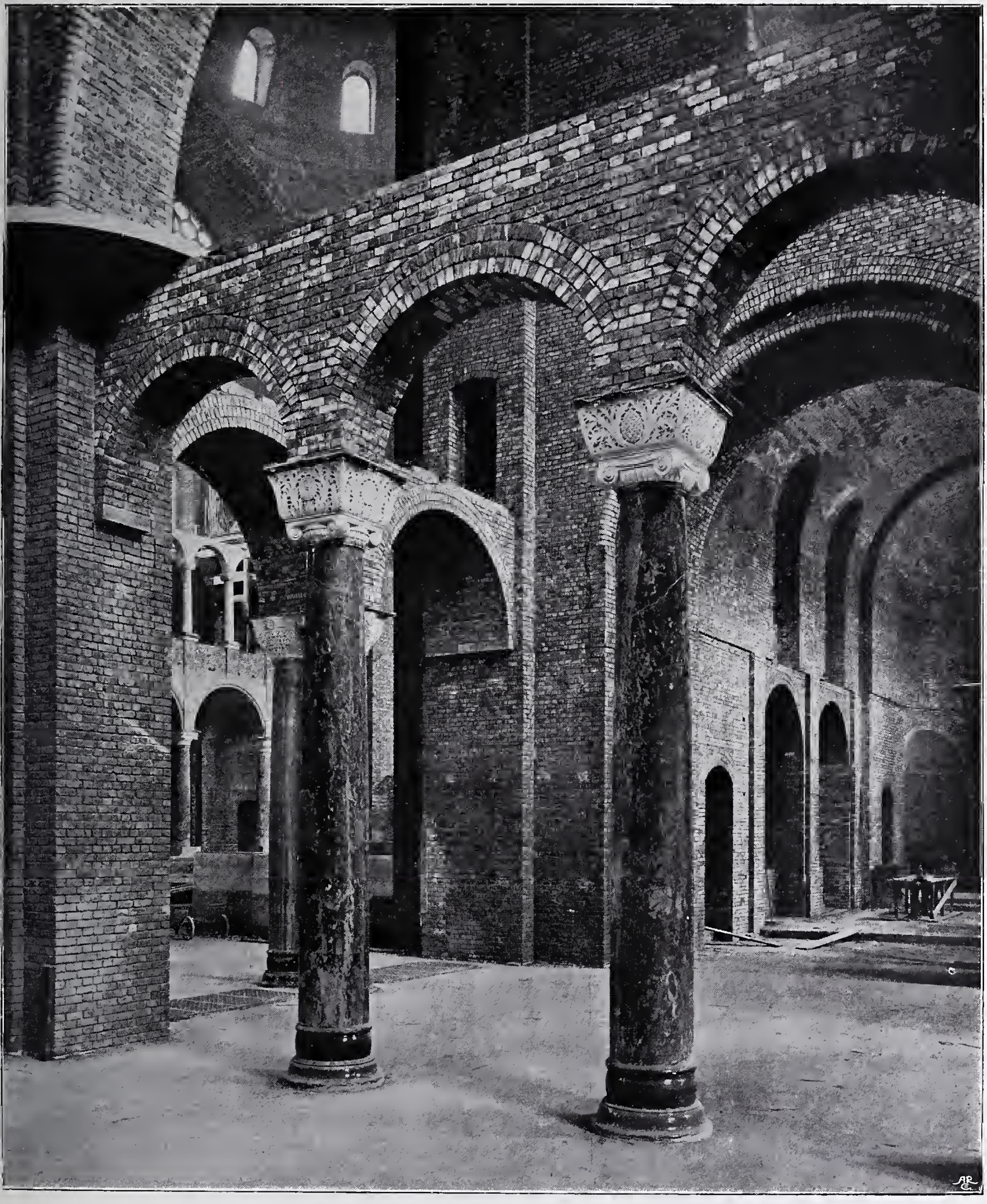
Nave its unique character. They are crossed by galleries at a height of 27 feet (to the capping of the balustrades), and rise 33 feet above it to the springing, and nearly 46 feet to the crown. He has also scored a success in the lighting. The *Tablet* writer characterises it as "a perfect solving of the problem." The tympanum of each of the main arches is pierced by a semi-circular lunette of 25 feet diameter, filled with delicate tracery, and below, between well-defined pilasters, a pair of windows is devised. The perspective of the interior has obviously been focussed on the High Altar and its covering, the Baldachino, the supreme spot of sacrificial interest. Each bay of the Nave holds in its lateral face the mystical number of seven arches, four on the ground level carrying the galleries, each 12 feet span, two secondary arches of 25 feet span, and the great archivolt "embracing and unifying the whole system"; and he has further happily emphasised the lighting by introducing a series of twelve windows round the Sanctuary dome, by which, "as from a crown, the pure light of Heaven is radiated over the Altar." The principal or western entrance from the exterior flanked by the Campanile, a composition extending 65 feet, and embracing in the great arch three doorways—the outer for the laity, and the middle for the Cardinal Archbishop, and clergy—leads into porches attached to a spacious Narthex the entire width of the church, terminating at one end with an entrance from the side street, and with the Baptistery at the other. The impression of the interior on entering through the great portal is truly described by Professor Lethaby in the *Architectural Review* of January 1902 as one "of reality, reason, power, serenity, and peace. Almost a sense of nature—the natural law of structure." And he testifies to the Cathedral from its vast area and spaces having one of the marked characteristics of S. Peter's, the Vatican basilica, *i.e.* that the height and distance give it an atmosphere of its own. The Narthex gives access to the Nave 60 feet wide, divided into three bays of 67 feet each, covered with domes rising out of pendentives which have been already described. The Aisles, 15 feet wide, are to be used for processional purposes, and also as access to four chapels on either hand; they are separated from the nave by marble columns supporting a continuous groined arcade. From the easternmost bays of the Nave, Transepts of unique and interesting design project with additional entrances, and it will not be out of place to reproduce the Architect's description, which appeared in the *Cathedral Record* of July 1896:—

> "In the western half of the Transept, facing Ambrosden Avenue, an entrance is provided, and access obtained to the interior through a porch and lobby. In the other half, continuing the line of the porch, a chapel of small dimensions is introduced to enhance the scale of this portion of the structure. Crosswise, the Transept is divided by a wall, pierced with two arches resting on a column of the same dimensions and character as the columns of the aisles. Continuing the line of the Nave along the Transept, columns are set in pairs to carry the arcade under a gangway, which connects the gallery in the Nave with that in the Sanctuary. The pier at the east angle of the Transept encloses a staircase ascending to an external clerestory and to the roof. On the south side the Transept is similarly treated except that recesses for Confessionals, and a Shrine, are substituted for the Chapel and Porch, and an extra arch is added to the cross-divisional wall."

Two larger chapels, that of the Blessed Sacrament and of Our Lady, open right and left out of the Transepts, with side aisles giving access to the Sanctuary and to the Sacristies.

The Sanctuary, or ritual choir, 65 feet by 50 feet, is surmounted by a dome pierced with windows. Although the Sanctuary is not separated from the nave by a screen, open or otherwise, the separation is very clearly marked by the communion-step, and by a broad passage-way which is formed between the communion rail and the low wall enclosing the Sanctuary—it being recessed in the middle to take the ends of the first steps leading to the higher level.

Above, still further emphasising the distinction, is suspended a gilded and decorated wooden Crucifix, 30 feet high, with paintings of Christ, and at the extremities of the four



VIEW FROM WEST TRANSEPT LOOKING ACROSS SANCTUARY.

Photo. S. B. Bolas & Co.

Evangelists, and behind of the "Mater Dolorosa." This holy rood will be the dominant note of the whole interior.

— CHRISTUS VINCIT — CHRISTUS REGNAT — CHRISTUS IMPERAT —

Right and left of the dwarf wall are to be placed the canons' stalls raised on a marble plinth of the same height as the steps, which ascend from the lower part of the Sanctuary, called the "Presbyterium," to the "Sanctuarium" proper. On this plane is to stand the Baldachino, flanked by eight monolithic columns resting on pedestals taking a semicircular form, and bearing a marble canopy—the whole imparting greater dignity to the High Altar—a block of Cornish granite fine-axed over, 12 feet long and 4 feet wide. It will presumably be clothed with embroidered frontals, or precious metals—such a covering, in fact, as the well-known "Pala d'Oro" in S. Mark's, Venice, or in S. Ambrogio, Milan, and such as stood in more than one of our English cathedrals in the olden time.

On the left or gospel side is the marble Archiepiscopal throne on its own daïs, modelled after the ancient one in the Lateran basilica, and on the right, or epistle side, facing it, the seats for the celebrant, deacon, and sub-deacon. with the credence-table.

Behind the Baldachino under a marble parapet, five arches extend between the pier responds, four opening into S. Peter's Crypt, or Confession, the middle arch being a blank.

At either side a double range of superimposed columns supports the lofts or galleries for the singers, enclosing a ceremonial space, or Sacrarium, in front of the High Altar steps.

From each end of the Altar flights of steps meet in a landing immediately behind, and a further flight leads to the retro-choir, which, as at S. Ambrogio at Milan, S. Miniato at Florence, and elsewhere, is at a higher level, some 13 feet above the nave floor of the cathedral; and beneath it is S. Peter's Crypt and altar. The stalls are arranged in two concentric rows, to be occupied by those whose duty it will be to sing daily the Breviary Hours. This retro-choir has a semicircular apsidal termination. The longitudinal section shows how the Architect has dealt with the problem of the Organ.

The marble Pulpit has been executed in Rome, and is decorated with mosaics. It will be placed against the central pier of the south Transept, and is capacious enough for the Archbishop and his two assistants, who will stand 4 feet above the nave floor, or level with the heads of a seated congregation.

The circular staircases at each corner of the plan, giving access to S. Peter's Crypt and the working Sacristies, to the galleries, tribunes, and the roofing flats, have been already described.

In describing the Chapels it should be noted that there are two larger ones flanking the sanctuary—to wit, the Chapels of the Blessed Sacrament and Our Lady. They are to be sumptuously decorated, the cost of altars, marble work, and mosaics having been subscribed: £12,000 or more collected for the former by the Rev. Kenelm Vaughan in Spain and Spanish America, and £17,000 available for the latter, a bequest by the late Baroness Weld.

Two only of the side Chapels are at present in a forward state of progress. In the Chapel of SS. Gregory and Augustine the altar and marble work are completed and the mosaic work is proceeding; while in the opposite Chapel, that of All Souls, on the north side of the Nave, the altar, with its reredos and pictures in *opus sectile*, is completed, and the finishing touches are being put to the mosaics of the vault and arches, which are from the cartoons of Mr. W. C. Symons.

The erection and decoration of the Altar and Chapel of S. Joseph have been undertaken by another donor. In the Baptistery will be a marble Font designed by the architect, and the large niche will be occupied by a bronze statue, a copy of Thorwaldsen's well-known S. John the Baptist, ordered by the late Marquis of Bute a few months before his death. The seated figure of S. Peter, a facsimile of the bronze figure familiar to those who have visited the Vatican basilica, which stood in old S. Peter's, has been placed on its marble pedestal against one of the main piers of the Nave.

After this recital of works in hand or contemplated, attention may be directed to the working part of the Cathedral.

Its Sacristies, with strong-room, stores, &c., are spacious and complete in every respect. The upper or vesting Sacristy is 60 feet by 30 feet, with an apsidal recess and altar at one end, and is furnished with oak presses, as in the great Italian churches.

The Cathedral registry is on the ground floor of the Campanile, which is 30 feet square.

Working drawings of a marble flooring of great beauty and originality had been completed by the Architect, a portion of which only is to be carried out.

The exterior appearance of the Cathedral has been so fully described elsewhere that only a passing notice is called for. Its most striking feature is the west front, with the deeply recessed entrance arch, of 40 feet span, enclosing the tympanum, which is to be filled with a mosaic picture. Above it, in bronze letters, is the dedicatory inscription, filling a panel in the centre of the balustrade:

DOMINE JESU REX ET REDEMPTOR
PER SANGUINEM TUUM SALVA NOS.

The Architect in working out the design has surmounted difficulties arising out of opposing rights of light, by setting back the upper portions of this front. Flanking the entrance are the two prominent staircases, with their domical, lead-covered roofs, and behind them rises the narthex. Still further recessed, the front terminates in the large western window which lights the nave.

The entrance arch is 4 feet wider in its span than that of S. Mark's at Venice, and is planned in receding orders, supported on columns whose entablature is carried across the entrance and beneath the three doorways, the doors for which are executed in teak, to be covered eventually with bronze plates. The upper portions of the front terminate, again, with domed turrets, and are flanked to the north by the Campanile, set back from the upper portion of the front, as noted on the plan. It has a delicate entasis. The upper portion is gathered from the square to an octagon crowned by a teak-framed cupola covered with lead, and terminates in the bronze archiepiscopal cross, some 10 feet in height.

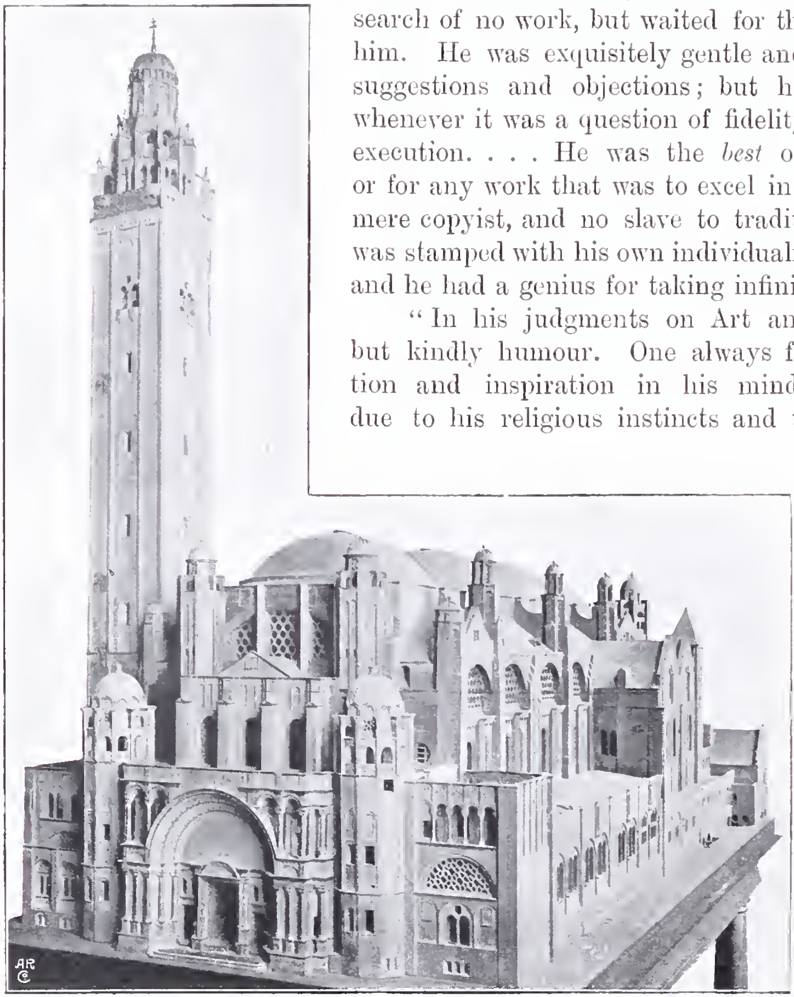
To anyone proceeding along Ambrosden Avenue an excellent idea is conveyed of the magnitude of the group of buildings, the length from the campanile to the extreme corner of the Archbishop's House being about 530 feet; and the outline and effect of the arch and transept, of the gables and square pyramidal flanking pinnacles, and the graceful finish of the apse of the retro-choir, is most striking. The Portland-stone banding of the brick facing is carried out throughout the exterior with admirable effect, giving piquancy to the whole. The terra-cotta tracery of the windows is interesting and varied in design.

Nothing now is left for me, save to chronicle the death of the Architect, which took place on Sunday, 2nd March 1902. On the previous midday I had seen him at 13 John Street, Adelphi, standing bravely at his drawing-table, and found him full of enthusiasm about the Cathedral's progress and greatly gratified by the honour the Council of this Royal Institute had conferred upon him by nominating him for the Royal Gold Medal. Before parting he brought out the drawings of the Great Crucifix and the marble pavements, on both of which he had much to say. We were to spend the next day together at his home at Clapham Common, but in the evening he had a fatal seizure of paralysis, and passed calmly to his long rest in the early hours of the Sunday morning. Since that time the works at the Cathedral have gone steadily forward, and the finishing stroke was put to the exterior on 2nd January last by the fixing, on the summit of S. Edward's Tower, of the bronze cross, which had been previously blessed by Cardinal Vaughan, who deposited within it a relic of the Holy Cross.

It is fitting, having accomplished the object I set out for myself, that at this stage I should close my Paper; and I cannot do so more appropriately than by quoting the graceful tribute recently paid by His Eminence Cardinal Vaughan to the memory of his Architect, in speaking of the completion of his *magnum opus*, in the *Cathedral Record* of June 1902:

"Mr. Bentley was a poet; he saw and felt the beauty, the fancy, the harmony, and meaning of his artistic creations. He had no love of money; . . . he had an immense love of Art, a passion for truth and sincerity in his work. He was not ambitious to get on, he was not self-assertive; but he coveted to do well. He went in search of no work, but waited for the work to come in search of him. He was exquisitely gentle and considerate in dealing with suggestions and objections; but he would have his own way whenever it was a question of fidelity to his standard of artistic execution. . . . He was the *best* of architects for a cathedral, or for any work that was to excel in artistic beauty. He was no mere copyist, and no slave to tradition. Whatever he produced was stamped with his own individuality—it was alive and original; and he had a genius for taking infinite pains with detail. . . .

"In his judgments on Art and style there was a critical but kindly humour. One always felt that there was an elevation and inspiration in his mind and character that were due to his religious instincts and to his unworldly standard of life. It seems to me that it will be necessary for the perfection of the work Mr. Bentley has left behind him to retain his mind as a guide to its completion, as far as we can know it. We know what happened to S. Peter's, and to other buildings in which the plan and the genius of the original architect were departed from. Let us maintain the main idea and the unity of Bentley's work to the end."



MODEL OF WESTMINSTER CATHEDRAL [see page 251].

DISCUSSION OF MR. HADFIELD'S PAPER.

The President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair.

Professor BERESFORD PITE [*F.*] said that they had looked forward to this evening with a great deal of interest, and he was sure that none of them had been disappointed. Mr. Hadfield had placed before them the work of a very interesting and beautiful life. Those who endeavoured to read the man in the building, to dissect the thought from the form, had discerned rising in their midst in London the work of a very singular mind, of a very powerful artistic character, and, undoubtedly, the work of a great man. In the midst of an almost entirely Philistine age, under auspices which seemed to have been particularly happy as between the client and the architect, as between a great employer and a great designer, he had carried out a work possessing not the slightest trace of the Philistinism of the age in which it was built. How far a philosophy which succeeded in abstracting itself from the spirit of the age which gave it birth was justifiable in an architect was another matter; but here they had a work of art, a work of genius, a work of character, a work of power, of which they had good cause to be proud, and for which they were, without doubt, thankful to those who had brought about its completion. This thankfulness was to be appreciated when they looked back upon the designs that had been put before the public for this Cathedral in Westminster. He had hoped that Mr. Hadfield would have thrown some light on that very interesting motive for building the votive church of Vienna in London. Mr. Bentley's work as a Gothic architect they knew from Eastlake's interesting history of the Gothic revival. Though he had only built small buildings in London or near to London, these buildings had revealed a remarkably fine mind and something of that strength of design which they associated with Burges' work. Later on came that extraordinary church at Watford, after the one in Cadogan Square—a church that revealed the fact that Bentley's mind was quite able to grasp the refinement and delicacy of the later forms of Gothic work as well as the stronger and more forcible character of the earlier work with which he had commenced. But from the church at Watford to this new Cathedral at Westminster was a very long cry indeed. They found the current movement in English architecture, the early and the latter stage of the Gothic revival, reflected through Bentley's mind in his work, and the sudden placing in his hands of this large commission evidently upset the whole of his preconception of the architectural ideal. Bentley, he imagined, worked in the Gothic movement with that ardent devotion, that almost spiritual appreciation of the mission of Gothic art in England which actuated Pugin and other enthusiastic leaders; and to find them all suddenly disappear, and the artist flinging himself into Ravenna, of all places, into the fever-laden marshes of the Adriatic, for the inspiration of a London cathedral, to follow the Gothic revival, though not to vindicate that movement, but to indicate a departure from it, seemed to him very extraordinary indeed. He did not suppose for one moment that Bentley expected to set a fashion, or to have followers and imitators. His mind seemed to turn in upon itself; he laid aside the traditions which had led him hitherto, and looked within for a new direction in which to express this unusual effort, this extraordinary commission which had fallen to his hands. When they, or their successors, came to look back upon the architectural history of the period, they would, perhaps, be filled with some wonder as to why he should have gone back. This, at all events to him, was one of the most interesting problems connected with the church. That he had gone back, or that he went back, consciously to the fountains of Christian ecclesiastical architecture in the East they could believe, so far as they could see; but he seemed distinctly to have laid aside the type of plan, to have avoided the central grouping, which was invariably connected with the early Christian form of domed church, and to have concentrated all his attention upon designing a nave—a great nave, a fine nave, a long nave, a lofty nave, a dignified nave, with the choir in the end bay. His scheme was original, so far as he could recollect, and entirely without precedent, and, so far, entirely characteristic of the age in which it was built; because they could not work with tradition—they were bound to fall back on originality; and, in spite of Bentley's wish to produce a building based on earliest Christian lines, they had the Gothic nave of the Church of the Cordeliers at Toulouse translated into a simple domed nave of four or five bays, based upon the same principle of lighting, upon the same principle of buttressing, but cut loose from all Gothic feeling in detail, and from any trace of Classic or Renaissance tradition. The effort, however, to try and see his mind in his work was, perhaps, premature. They could not conceive what dreams he had of beauty for that mosaic vault. He (the speaker) suspected St. Mark's, Venice, on a grand scale, worthy of a great city and a great age. He suspected dreams to emulate in mosaic the greatest works of mosaic workers. He suspected a strong reliance upon himself in the drawing and designing of that mosaic; because one could not quite guess where Bentley would have looked, apart from himself, for inspiration and aid in the drawing of such a scheme to cover such a huge building. But that was gone; that was a thing of the past; that was a thing not to be. They had to be content with it as they found it. But it was magnificent. The nave as it stood with its bare brick-work, its fine proportions, its magnificent lighting and screened lighting was immensely impressive in effect. But it was one effect, and one effect only; there was no change, there was no transit, there was no central grouping; it was the effect of a great nave, such as they found in the church at Toulouse. Of the bigness of this, and the absence of petty fussing details of cornices, they could speak with pleasure and comfort. Some of them could appreciate the pleasure of finding themselves able to deal with proportion, in space, in size, and light, without being troubled with the building up of every story in the design with sameness in detail and features, piling Order upon Order until the required height was attained. That seemed to have been dispensed with, and proportion, massing, and lighting alone relied upon. Upon this the success of the interior depended. Unfortunately, the plan had cramped his exterior design. There was no opportunity on the site for expressing the real dignity of the interior, and it was here that that interesting transept design was disadvantageous. The grouping of a crossing was lost, and the outside scarcely expressed the building. He half suspected that Bentley felt this himself; there was more restlessness, more effort, a more determined attempt to be fresh, in the design of the exterior than in the interior. The proportion, which was successful inside, was not, of necessity, successful outside; and he seemed to have been content to hide the domes, to rely on that great mass of the nave, with a very lofty campanile, and to have emphasised the campanile as the object of his affection and his love. They had to take it as it was, and they could not picture to themselves how it could have been otherwise. That was perhaps the greatest test of its success. They might have their criticisms; they might have their qualifications; but none of them could place themselves in Bentley's standing and say, "this should have been otherwise—I wish it was such!" The building would be the subject of much criticism. It would shortly be opened, and their clients and friends would be asking what they (the architects) thought about the Cathedral, and they would have to formulate some opinion on the matter. But the one thing that stood preeminent in the minds of all intelligent architects and artistic persons was that here was the great work of a great man; here was the fine architectural effect and embodiment of a great scheme, of which they must be proud, and for which they should always be thankful. They had to thank Mr. Hadfield very cordially, and he begged to move that the best thanks of the meeting be presented to him for his paper. It had been characteristically modest and thorough. He had touched upon the scientific problems of the building, and had wisely left the artistic ones to plans, to drawings, and to photographs.

Mr. ALFRED EAST, A.R.A., said he had probably been asked to second this vote of thanks—which he did most cordially—because, architecturally, he represented the "man in the street." From that point of view he wanted to say a word in praise of that great building of which they were all so proud. He felt in that building that a great artist had endorsed or built *himself* upon a recognised form, but at the same time had studied the requirements of modern use without loss of dignity. He felt, too, that the preponderating artistic expression was simplicity, dignity, and style. He would thank Mr. Hadfield for that tribute of praise to his friend, because it endorsed some interesting stories of the conception of the building, and the preliminaries to its construction. He also thanked Mr. Hadfield for the light thrown by his Paper upon Mr. Bentley's character and the circumstances which led to the final development of his scheme. As an artist he (the speaker) shared with his fellow-craftsmen a keen interest in architecture; they recognised it as one of the great arts—an art which first impressed one when visiting another country, as it represented the religion, the manners, the customs, and the history of its people. As regards this great Cathedral, they owed the architect a debt of gratitude for avoiding the possibility of a failure. It was a grand thing in these Philistine days to see such a noble erection in their midst. In that sense he cordially seconded the vote of thanks to Mr. Hadfield for his interesting paper, and he hoped that the ultimate design of the architect would be carried out. One thing he would add which impressed itself upon him as an Englishman. As the building was an English cathedral, designed by an English architect, he hoped the decoration would be done by Englishmen. Let them stand or fall by their work. If they failed in the decoration and were inferior, they must submit to the criticism of the world; but he believed they had amongst them men who could carry out the designs of the architect, and he would like that this opportunity, which came so rarely in their country, should be an opportunity of making it thoroughly English work.

Mr. WALTER MILLARD [*A.*] said that Professor Pite had told them that they must make up their minds about this church of Bentley's. He (the speaker) had been trying to make up his mind in his own way. He began by thinking to himself the worst thing he could about it—viz., how un-English was the fashion of it at first sight. For it was un-English to most of them. But he did not think that exhausted the question. To his mind it was designed by a man who was essentially a student of architecture, and a student of architecture who looked upon architecture and the history of architecture as a whole, looked at it from beginning to end—to now; and also looked at architecture, and monuments of architecture, for what they could tell him about themselves in the first place, and also for what they could suggest for him to do as an architect. A student who merely looked upon existing architecture to know what it was, stopped short of full knowledge; surely, Bentley, as an architect, wanted to go on to know what it told him to practise, to do; and Westminster Cathedral was an illustration of work by a man who had pursued the study of architecture in that broad way. Coming to the building itself, if one was expected to be critical, one could not help expressing a wish, somehow, that his great power, of which the interior gave such proof, of producing fine effects by simple means apparently, had been also exercised when he came to treat the exterior; that, in the same way as he had done in the interior, he had suppressed little things, more especially when the site and surroundings were considered. It seemed to him that any building, like any man, must accommodate itself somewhat to its surroundings, as a man would to his company; and what surroundings had that building to accommodate itself to? Where was the need, for the sake of its company, to make such a display of architectural finery externally? The contrast between his treatment of the interior and the exterior had always impressed him as something he could not quite reconcile or understand; unless it was that Bentley hoped that the surroundings themselves would change some day. It was a site, surely, as little inspiring as anyone could think of. Its chief merit, perhaps, was its cheapness; but, that being so, he still wondered that Bentley gave so much to the exterior—although of course they all knew that he meant the interior to surpass the exterior in richness, variety, and everything else. But the point for us to consider was, what was the lesson that it taught, a great building like that finished at the beginning of the twentieth century—what was the lesson to us? Was it not, in one phrase, for an architect Self-reliance—self-reliance in his studies, self-reliance in his work? Did Bentley depend upon anybody but himself? Well, and justly, may his brother-architects regard him as a man who played the game, wearing himself out in the effort to get his work as right as he could!

The PRESIDENT, in putting the vote of thanks, said they were all greatly indebted to Mr. Hadfield, who knew Mr. Bentley so well, for bringing this great building before them in so interesting a way. There was no doubt that the building had excited extraordinary interest. That was not, perhaps, to be wondered at, for a great cathedral could not be built, even in the city of London, without attracting notice. It had attracted the interest of architects of all shades of opinion, and had had more influence on the younger men now entering practice than any building erected of recent years. One reason for that, he imagined, was that Bentley had to solve a problem which most of them had to solve from time to time—the old, old story of building a church for an ancient religion, to house that religion in a building which, to some extent at any rate, represented the needs and requirements of the present day. That was where it had interested them to so great an extent. Then, again, as Mr. Alfred East rightly said, the man had built himself into his building. He (Mr. Webb) had been told by Mr. Hadfield that the building was the one end of his life—that he bestowed upon it all the energy and thought and vitality that was in him. One could not go round it, whether one liked it or not, either on the outside or the inside, without seeing in every quoin, in every corner, in every arch, and in every bit of moulding and carving the man himself in it. Another point of interest was that the plan had been the basis of his design; one saw his brain working out the natural result of that plan in the sections and elevations of the buildings throughout. He had made the construction to be his design, and he had let his design be influenced by his construction. That appeared to him to be the essence of all true architecture which could influence men who came to view it after the personality of the architect himself had passed away. They all agreed in hoping with Mr. Alfred East, that where Bentley had left such a magnificent field for decoration, so rare and so required in England, that field of decoration might be open to Englishmen to cover. It would be very interesting if Mr. Hadfield would kindly tell them whether he knew of any scheme that Mr. Bentley had left for that decoration. They knew that he was a master of the decorative art, as well as of the constructive art, and that had he lived he certainly would have dictated to a large extent the motives of the whole of the decoration. He had heard suggestions that there was some such scheme in existence. They must all hope so, and that the mosaic decoration that was now going on was part of some great scheme which Bentley himself devised. Mr. Hadfield had referred to a magnificent design for the marble pavement over the whole of the church, and, although they were told that only part of that was at present to be executed, they hoped that in due time that unique design would be carried out.

Mr. HADFIELD, in reply, thanked the meeting for its appreciation of his labours. The preparation of the paper had been a labour of love to him, and it had been a delicate if not difficult task. He could not presume to know Bentley's mind about many things. He was a man singularly secretive, even with his friends; and but seldom spoke about his intentions. With regard to what Professor Pite had said, he could mention one thing of his own knowledge. Professor Pite wondered how it was that Bentley came to design a building in this style. As far back as the early sixties the study of Byzantine work was no new thing to him; all his early designs for decoration, glass, church plate, and so on, were influenced by it, and he was enthusiastic about the Romanesque architecture of Burgundy and Provence, of the Rhine and of North Italy. He was a man who never took up a thing as a mere fad; if he took a thing up he sooner or later went right through with it. The history of this great Cathedral was that Cardinal Vaughan had asked him to do a certain thing, and, sympathising with and loyally accepting His Eminence's views, he had done his best to realise them; and he went to Italy simply to drive home and concentrate on his task all the ripe knowledge gained by his studies in previous years. He was ever loyal to the best mediæval traditions of the Gothic revival, and admired the genius and work of Augustus Welby Pugin, although he was fond of poking fun at those who took "the true principles" too seriously. He was a man of broad and tolerant mind; and viewed most things architectural from a generous standpoint. The real history of the building was that, having been called upon to design a cathedral on fixed lines, he took up the Justinian tradition as the best way of doing it, bringing it down to the twentieth century level by planning and building a great church suitable for congregational purposes and modern requirements. Mr. Millard's remarks on the general design were beautifully summed up. Bentley was thorough and he was self-reliant. He took pleasure in work for work's sake—his motto was ever "Laborare est orare," and he laid it down that an architect who undertook the designing of anything, a chalice, a stained glass window, church or domestic furniture, or any ordinary piece of building construction, should draw the whole thing out himself in such fashion as would enable the craftsman who had to execute it, to do so with ease and pleasure in his handiwork. He had no doubt written his own life into the building. With regard to Mr. Millard's criticism about the exterior, it might be that the architect had unconsciously played to the "man in the street"; and had gone in for "outside show." But, after all, in looking to St. Sophia for inspiration, his ideal had been to reproduce, as he told them, the glorious Apocalyptic vision here below of that "Cælestis urbs Hierusalem," of which the Royal Psalmist sings, "All the beauty of the King's daughter is from within." His (the speaker's) view was that the exterior had resulted from the plan and sections, and was the logical sequence of the interior. Bentley's arrangement and construction were thorough; but perhaps in the exterior one saw touches here and there which had been directed by his long life studies, and sympathy with mediæval ways of design.

9, Conduit Street, London, W., 21*st March* 1903.

CHRONICLE.

The Royal Gold Medal.

The following letter, addressed to the Secretaries of the Institute, was read at the General Meeting of the 16th inst.:—

Buckingham Palace, 10*th March* 1903.

Gentlemen,—I have to acknowledge the receipt of your letter of the 5th instant, in which you announce for the information of His Majesty The King that the Institute of British Architects has awarded the Royal Gold Medal for 1903 to Mr. Charles Follen McKim.

I have had the honour to lay your letter before The King, and I am now commanded to signify to you His Majesty's approval of this award, and instructions have been given for the Medal to be prepared.—I have the honour to be, Gentlemen,

Your obedient Servant,
D. M. Probyn, General,
Keeper of His Majesty's Privy Purse.

Death of Professor T. Roger Smith [*F.*].

The President, at the opening of the proceedings of the General Meeting last Monday, said it was his melancholy duty to announce the death of another very distinguished member of their body—Professor Roger Smith. He died on Wednesday the 11th inst., and had been laid to rest that day. They all knew him, and they all loved him very much. He had been elected an Associate of the Institute in 1856, and a Fellow in 1863. It was not too much to say that no member of the Institute from that time had taken a more active and more useful part in the work that had been carried on there. Professor Roger Smith was a real student of architecture. He was a very learned man, a very modest man, and a very lovable man. His practice took many forms, and many branches of their art engaged his attention. Whatever he did he did with single-mindedness, and he had that happy and sympathetic quality of being able to meet his professional brethren in all sorts of ways, and he (the President) believed he was using no language of exaggeration when he said that he had made no enemies in doing so. He had served on the Council and held other posts in the Institute, and was twice President of the Architectural Association. He was District Surveyor for West Wandsworth, President of the British Institute of Certified Carpenters, and Examiner in Carpentry and Joinery and in Sanitary Building Construction to the Carpenters' Company. He was a member, and served for a time as Chairman, of the Statutory Body of Examiners, and Chairman of the Joint Committee which had in hand the question of the amendment of the law of Ancient Lights, on which he was a great authority. He was Architect of the North London Hospital for Consumption at Hampstead, of the Ben Jonson Board school at Stepney, the Sanatorium at Reedham, of the new laboratories at University College, London, and other important buildings. He was the author of numerous papers relating to architecture, and a very large number of young men had passed through his hands as Professor of Architecture and Building Construction at University College, all of whom would, if they had the opportunity, be glad to testify to the value of his teaching and the kindliness of his heart. A fuller notice of his life and work would appear in due course in the JOURNAL; it only remained for him now to express the great regret of the Council and the members of the Institute at the loss they had sustained. He had died full of years and full of honour, they were thankful for that, and they were specially thankful for the memory of him, for his kindliness and the sympathetic way in which he always treated them. It would be the wish of the Meeting, he was sure, that they should forward to his widow and family a sincere vote of condolence in the loss which they had sustained, and an expression of their appreciation of the work he had done for the Institute during his long connection with it.

Mr. Alex. Graham, F.S.A. (Hon. Secretary), said that every Member of the Institute would endorse the respectful and sympathetic words uttered by the President with relation to their deceased and dear friend, Roger Smith. There were many, doubtless, better acquainted with his work and his career than himself, but in all the transactions he had had with him in professional matters he found him a man full of enthusiasm for the work he had to undertake, and always with a sincere desire to do that which was right and just towards his fellow man. He hoped that in the letter to be sent to his relatives some expression would be given of their appreciation of Roger Smith as a man, as well as a professional brother. The goodwill he always displayed to those with whom he had to deal, and the kindliness of heart which prompted him in all his transactions, would be a very pleasant memory to them all. He was quite sure it would be gratifying to his relatives to receive from the Institute as a body an affectionate expression of their reverence for so kind, good-hearted, and worthy a man.

The funeral service was held at St. Peter's, Vere Street, on Monday, and was attended by numerous members of the Council and the general body.

Mr. Hadfield's Paper.

The Paper on Westminster Cathedral attracted a numerous company to the Institute on Monday, some members of the family of the late Mr. Bentley being among the visitors. Before calling on Mr. Hadfield for his Paper, the President stated that the Council had hoped that the Duke of Norfolk and Cardinal Vaughan might be present. The Duke of Norfolk, however, had not yet returned from Rome, and the Cardinal had sent the following letter:—

Archbishop's House, Westminster.

DEAR MR. WEBB,—I regret to say that the state of my health will not allow me the pleasure of accepting your kind invitation. I hope I may see Mr. Hadfield's Paper in print somewhere.

Yours faithfully,
HERBERT, CARD. VAUGHAN.

The Yeovil Competition.

Before the conditions of the competition for the laying out of land in the town of Yeovil were issued, the Town Council were urged by the Institute to model them upon the "Suggestions." No notice has been taken, apparently, of this communication, as the conditions are thoroughly unsatisfactory. The Competitions Committee of the Institute are authorised by the Council to request members to abstain from entering for this competition.

The Vigilance Committee.

The aims of the London Architectural Vigilance Committee, which held its first meeting in the rooms of the Institute on the 17th inst., are set forth in the following circular issued last December:—

DEAR SIR,—In view of the disfigurement of London—past, present, and possibly in the future—by the carrying out of public works, such as bridges, railway stations, street improvements, &c., with little regard to their adequate artistic treatment, it is proposed to form a permanent reference committee, under the title of the London Architectural Vigilance Committee, to deal with the subject.

The objects of the committee would be twofold:—

1. To endeavour to act by influencing public opinion, and, if necessary, to protest against the action of public authorities in refusing to consider qualified advice on the æsthetic as well as sensible treatment of public works of art.
2. To constitute a body which should be able and willing to give competent advice to public bodies when occasion arises, and to place its judgment and advice at their disposal.

With these ideas in view, it is proposed that the committee shall consist only of such persons as, from their artistic position or experienced judgment, are entitled to offer advice or to undertake criticism.

The case of Vauxhall Bridge, in regard to the scheme before the public, has suggested the formation of such a committee. Matters have come to a crisis; either the aspect of London is to be still further injured by persons avowedly indifferent to æsthetic considerations, or something must be done to check the proceedings of public bodies who are evidently unaware of the fact that art and utility are one and the same thing.

Below is a list of those whom it is at present proposed to invite to constitute the committee. The names of an eminent engineer and of the President of the Institution of Civil Engineers are included in the list, as they may be able to give valuable advice on structural questions, and it is hoped that when engineers are convinced of the importance of the architectural treatment of public works, they will be ready to act with us in assisting to secure it. It has also been thought well to include in our invitation two or three distinguished amateurs, who will represent the opinion and feeling of the most cultivated section of the public outside of the artistic professions.

We invite you in the first instance to say whether you approve of the principle of such a committee, and whether you are willing to become a member of it.

Kindly reply to the hon. secretary *pro tem.*, at the above address. We are, yours faithfully,

W. B. Richmond,
H. Heathcote Statham (Hon. Secretary *pro tem.*).

The Right Hon. Lord Windsor, P.C., Lord Balcarres, M.P., Sir John Stirling-Maxwell, Bart., M.P., Sir E. J. Poynter, Bart., P.R.A., D.C.L., LL.D., Sir W. B. Richmond, K.C.B., R.A., D.C.L., T. Brock, Esq., R.A., G. J. Frampton, Esq., R.A., Aston Webb, Esq., A.R.A., P.R.I.B.A., John Belcher, Esq., A.R.A., F.R.I.B.A., Sir Benjamin Baker, K.C.B., K.C.M.G., &c., Sir Thomas Wrightson, Bart., M.P., Professor Pite, F.R.I.B.A., W. D. Caröe, Esq., F.R.I.B.A., H. T. Hare, Esq., F.R.I.B.A., President of the Architectural Association, Dr. Longstaff, L.C.C., M. H. Spielmann, Esq., editor of the *Magazine of Art*, H. Heathcote Statham, Esq., F.R.I.B.A., editor of the *Builder* (Hon. Sec. *pro tem.*).

In a letter to *The Times* a few days ago, Sir Wm. Richmond stated that the object of the committee will be to promote, as far as possible, a more dignified and rational appearance to metropolitan schemes relating to bridges and edifices. Lord Windsor has accepted the office of Chairman.

The late John Bond Pearce [*F.*].

We regret to announce the death of Mr. John Bond Pearce, of Norwich, a Fellow of the Institute, elected in 1879. He was the son of the late William Pearce, of Intwood, and was born at South Walsham in 1843. He was educated at Beccles, and afterwards served his articles with the late Mr. Morant, then of Yarmouth, and subsequently borough engineer at Norwich and Leeds. He started in business at Norwich, and soon laid the foundations of a very successful practice. He did a great deal of work for public bodies in all parts of Norfolk and Suffolk, and was architect to the Norwich Board of Guardians and the Forehoe Incorporation. The Yarmouth Town Hall and the Norwich Agricultural Hall are his chief works. He built numerous Board schools, restored a number of churches, and did work in connection with most of the workhouses in Norfolk and Suffolk.

Architects' Benevolent Society.

The Fifty-third Annual General Meeting of the Architects' Benevolent Society was held in the rooms of the Royal Institute on Monday, 9th March. There was a good attendance of members, including the President of the Society (Mr. Aston Webb), Mr. J. Macvicar Anderson, Mr. J. T. Christopher, Mr. Reginald St. A. Roumieu, Mr. H. L. Florence, Mr. Graham C. Awdry, Mr. Osborn C. Hills, Mr. T. H. Watson, Mr. Zeph. King, Mr. G. Hubbard, Mr. H. Lovegrove, Mr. G. Inskipp, Mr. George Scamell, Mr. J. R. Moore-Smith, Mr. Percivall Currey and Mr. W. Hilton Nash.

The Annual Report of the Council was read as follows:—

"The Council of the Architects' Benevolent Society have held seven meetings during the year, the average attendance of members being nine. Fifty-two applications for assistance have been investigated, and the sum of £593. 10*s.* has been distributed in relief. In addition to this, the sum of £205 has been paid to the Society's pensioners.

"The investments which the Council were enabled to make last year in consequence of Mr. Cates' bequest, and the generous response to Mr. Macvicar Anderson's appeal, are now bearing fruit. Had it not been for this addition to the dividends, the Council, it is feared, would have had to report a serious diminution of the income occasioned by the falling off in the amount received in subscriptions. At the close of the financial year, thirty subscriptions were in arrear, notwithstanding repeated and urgent applications for payment. It is hoped, therefore, that the claims of the Society will become more generally recognised, and that the progress which has been made within recent years, both financially and in practical usefulness, may not be checked through the lack of adequate support. Architecture is not one of the most lucrative professions, and those who practise it are not always in a position to make provision for later life or for those depending on them, or to anticipate the needs occasioned by disease or accident. The Society meets the necessities of such cases as these; and the Council, on behalf of their poorer brethren, look to those in prosperous circumstances for sympathy and help.

"The Council desire to thank the President of the Royal Institute of British Architects, who is also their President, for the reference which he made to the Society in his opening address at the

Institute, and the Presidents and Councils of provincial societies who have brought the needs of the Society before their members.

"The Resolutions moved by Mr. J. T. Christopher, and adopted at your last meeting, were subsequently confirmed by a General Meeting convened for the purpose on March 24. The immediate result of these changes in the By-laws was to enable the Council to extend its investments to Colonial stock by the purchase of £363. 2*s*. 3*d*. New Zealand 3 per cent. Inscribed stock (which is now a Trust investment) at a cost of £350; and, further, to increase the number of the Society's pensioners from six to ten.

"The sum of £154. 4*s*. has been received in donations during the year and placed to the credit of Capital account. Contributions were received from Mr. T. E. Collcutt, £25; Mr. T. W. Aldwinckle, £21; Mr. Graham C. Awdry, £20; Mr. Arthur Ashbridge, £10. 10*s*.; Mr. A. W. Chadwick, £10. 10*s*.; Mr. W. Hilton Nash, £10. 10*s*.; Mr. Wm. Owen, £10. 10*s*.; Mr. John Belcher, A.R.A., £10; Sir Lawrence Alma-Tadema, R.A., £5. 5*s*.; Mr. George Frampton, R.A., £5; Mr. J. T. Christopher, £5. 5*s*.; Mr. E. Ingress Bell, £5. 5*s*.; Mr. T. H. Smith, £5. 5*s*.; and Mr. C. T. Whitley, £5. 5*s*. Many donations of smaller sums were also gratefully received.

"Your Council have the pleasure to report that the subscription of the Royal Institute of British Architects has been increased to £21; and that twelve new names have been added to the list of subscribers.

"At the request of the Council Mr. W. Hilton Nash kindly prepared a design to take the place of that hitherto used on the cover of the Red Book. The design was accepted, and Mr. Nash cordially thanked for his services in the matter.

"The following gentlemen being the five senior members retire by rotation from the Council—Mr. Zeph. King, Mr. G. Inskipp, Mr. J. T. Wimperis, Mr. Arthur Green, and Mr. E. Monson. To fill the vacancies caused by these retirements the Council desire to nominate Mr. E. A. Gruning, Mr. Edwin T. Hall, Mr. Lewis Solomon, Mr. William Woodward, and Mr. H. H. Collins.

"The Balance Sheet and Income Account for the year ended December 31, 1902, audited by Mr. Edmund Buckle and Mr. George Hubbard, are herewith submitted.

"The Council have to thank the Royal Institute of British Architects for their increased subscription, and for office accommodation and the use of rooms in which to hold their meetings. Thanks are also due to the Secretary (Mr. Locke) and the other officials for their cordial interest and help in any matter connected with the Society."

The President, in moving the adoption of the Report, strongly urged the claims of the Society on the attention of the architectural profession, and pointed out that the number of architects who supported the Society, in comparison with the number in practice, was not as large as might be expected. It was a matter for congratulation that the Society had been able to increase the number of pensioners to ten, and the Council would like to increase the number still further, as there was nothing so helpful to a man as a small pension which he could rely upon. One of the advantages of the Society to applicants for relief was that there was no publicity attached to the application and that outside the Council no one knew who received help. The President concluded by asking the support of those who were not already subscribers.

On the motion of Mr. Lovegrove, seconded by Mr. Scamell, a vote of thanks was passed to the outgoing members of Council: Mr. Zeph. King, Mr. G. Inskipp, Mr. J. T. Wimperis, Mr. Arthur Green and Mr. E. Monson.

Mr. Macvicar Anderson moved and Mr. Lovegrove seconded the Resolution by which the Council for the year of office 1903-4 was elected as follows:—President, the President of the R.I.B.A., Mr. Sydney Smirke, Mr. H. L. Florence, Mr. Graham C. Awdry, Mr. J. T. Christopher, Mr. F. T. Baggallay, Mr. J. J. Burnet, Mr. J. H. Christian, Mr. R. St. A. Roumieu, Mr. G. Scamell, Mr. E. A. Gruning, Mr. Edwin T. Hall, Mr. Lewis Solomon, Mr. Wm. Woodward and Mr. H. H. Collins.

Cordial votes of thanks were passed to Mr. W. Hilton Nash, the Hon. Treasurer, and Mr. Percivall Currey, the Hon. Secretary, for their services during the past year, and both gentlemen were re-elected to their respective offices.

Mr. W. Hilton Nash proposed and Mr. King seconded a vote of thanks to the retiring auditors, Mr. Edmund Buckle and Mr. George Hubbard, and on the motion of the same gentlemen Mr. E. Buckle and Mr. Henry A. Hunt were elected auditors for the ensuing year.

On the motion of Mr. Inskipp, seconded by Mr. Christopher, a vote of thanks was passed to the R.I.B.A. for office accommodation and use of rooms for the purposes of meetings.

The proceedings closed with a hearty vote of thanks to the Chairman.

The Lightning Research Committee.

The Committee formed two years ago by the Royal Institute of British Architects and the Surveyors' Institution to investigate the action of lightning strokes on buildings, with a view to the improvement of current methods of protection, have circulated among their observers a summary of cases recorded for the Committee of buildings struck by lightning and damaged during the year 1902.

At the beginning of the year the Committee considered that the previous year's observations had given them all the data needed as regards non-protected buildings, and they decided to confine their attention for the future to cases where buildings were struck and injured in spite of the provision of lightning-rods for their protection. Out of sixty cases recorded for the Committee in 1901 no fewer than twelve were of buildings fitted with some form of lightning-conductor. Considering the numerical ratio of protected to non-protected buildings, and allowing for the fact that protected structures are usually in some of their parts in more exposed positions than the non-protected, the proportion must be considered extremely unequal.

In face of some recent disasters brought to the notice of the Committee it is not surprising that dissatisfaction is felt with the system recommended by the Lightning Rod Conference of 1882. Last year the Committee's observers sent in reports of sixteen protected buildings struck by lightning—some slightly, others very seriously injured, or entirely destroyed in parts. Details of these will be given in the final report of the Committee, together with comments thereon. An interesting case may be quoted. It is that of a large country-house in Sussex, erected some twenty-eight years ago, and till recently without any form of protection. In 1901, a church in the immediate neighbourhood having been struck, the owner of the house, for greater security, decided to have lightning-rods put up. An elaborate system was installed, and completed in March 1902, nearly every portion of the building having its own finial and conductor. During the storm season of last year, the house was twice struck—on 17th June and on 8th August. On each occasion, besides other injuries, a chimney-stack was damaged, the brickwork being split up and the capping-stones dislodged and hurled about in all directions. The lightning-rods on the damaged chimneys were torn from their supports and much bent.

Other protected buildings recently struck, of which reports have been received, include All Saints' Church, Boyne Hill, Maidenhead; St. Andrew's Church, Mark's Tey, Essex; New St. Pancras Church, Marylebone Road; Swanscombe Church, Kent; St. Botolph's Church, Aldgate; St. Michael's Church, Highgate; Devaar Island Lighthouse, Argyllshire; South Foreland Lighthouses; Factory chimney, Nelson, Lancs.; Cavendish Laboratory, Cambridge; Tiffin's School, Kingston-on-Thames; Ainsworth Mill, Lancaster.

All these cases are being carefully studied by the Committee. They hope to be in a position to report on the whole question of lightning protection at the end of the present year, and to offer some suggestions for more efficiently guarding buildings. Meanwhile they desire the continued co-operation of observers in this important inquiry, it being necessary that they should be supplied with as complete details as possible of protected buildings, to enable them to arrive at the causes of failure of the means of protection adopted.

The Committee are contributing an exhibit to the Loan Section of the International Fire Prevention Exhibition to be held at Earl's Court this year, and invite the loan of objects of interest appertaining to the subject for the purpose of adding to their collection. Anyone in possession of relics of lightning disasters, and willing to lend them, is requested to communicate with the Secretary to the Committee at 9 Conduit Street.

The Committee is constituted as follows:—Mr. John Slater [*F.*], *Chairman*; Sir Oliver Lodge, D.Sc., LL.D., F.R.S.; Major-General E. R. Festing, C.B., F.R.S., Director of Science Museum, Victoria and Albert Museum; Messrs. J. Gavey, M.Inst.C.E., Engineer-in-Chief, General Post Office; W. P. Goulding, F.R.G.S., F.S.I.; W. N. Shaw, F.R.S.; H. Heathcote Statham [*F.*]; A. R. Stenning [*F.*], F.S.I.; Arthur Vernon, President of the Surveyors' Institution; Killingworth Hedges, M.Inst.C.E., *Hon. Secretary*.

ALLIED SOCIETIES.

THE ABERDEEN SOCIETY.

The Retiring President's Address.

At the Annual General Meeting of the Aberdeen Society of Architects, held on the 3rd March, the following Address was delivered by the retiring President, Mr. Arthur Clyne:—

Gentlemen,—The occasion of our Annual General Meeting seems to me a fitting opportunity to address you briefly on the work of the Society, from its formation, just five years ago, to the present time. And in the first place, I desire to express my sense of the honour you have done me by electing me for three successive years as your President. I can assure you that I value the compliment highly, and I will only add the expression of my regret that I have been unable to do more for the promotion of the Society's interests, and of my hope that the President whom this evening you will elect in my place will be able to do more, and so in some degree make up for his immediate predecessor's shortcomings.

I turn now to the consideration of what we have been doing during the past five years, and I begin by reminding you of the purposes for which our Society was established. These, as expressed by the terms of our Articles of Association, are as follows:—"To support and protect the character, status, and interests of architects practising in Aberdeen; to promote personal acquaintance and good fellowship among members of the profession in Aberdeen; and to establish and maintain an acknowledged code of professional practice and charges."

How far, then, up to the present, have the objects thus set forth been attained? This is a question the importance of which, I think, merits our attention for a few minutes to-night, and in order to arrive at something like a just conclusion on the subject it is necessary first to pass under review some of the leading events in the Society's short history. This I shall endeavour to do as rapidly as possible.

After applying for and obtaining affiliation with the Royal Institute of British Architects, the first matter of importance calling for the attention of the Society was a question arising out of a difficulty experienced by a member in connection with a provisional sum allowed for gas fittings in a contract for plumbers' work. As to this, the Council held a meeting with representatives of the Plumbers' Association, which resulted in a satisfactory understanding being arrived at regarding the point in dispute. Shortly afterwards the opinion of the Society was asked by the Town Council of Aberdeen as to the amount of remuneration that should be given to the competing architects in the matter of the proposed Fisheries' Exhibition, the Corporation and the competitors having agreed to refer the question to our Council for decision, and one recalls with pleasure the fact that on the basis of the Council's award an agreement was come to on the point which was quite satisfactory to both parties. A little later, a somewhat important conference took place between the Council of the Society and the Federation of Master Builders in Aberdeen, when various proposals were under consideration regarding matters affecting the interests, jointly, of architects and the building trade, among these being the question of the introduction in architects' schedules of a clause to cover insurance against injury to workmen, the term of maintenance of contract work, the practice in regard to provisional sums, and the insurance against fire of buildings in course of construction. Arising out of this, another conference falls to be noted, this time with members of the Master Painters' Association, when certain matters relating specially to this branch of the building trade were discussed, such as the mode of scheduling painters' work and the insurance of plate glass, a general agreement being arrived at on the several points under consideration.

The subject, however, which chiefly occupied the attention of the Society during the year with which I am now dealing (1899) was the proposed new Police and Improvements Bill for the City. Recognising the important bearing of such a measure on many questions connected with architure and the building trade in Aberdeen, our Council took the matter up, and held several meetings on the subject, when the various clauses were considered. Afterwards, in conjunction with representatives of the Master Builders' Federation, they took part in a conference with a committee of the Town Council, at which the whole matter was amicably discussed. While a complete agreement was not arrived at, it is satisfactory to note that the arguments adduced by our Council regarding the clauses to which the Society took exception were respectfully listened to, and had the effect of influencing in some degree our civic rulers in their final revision of the Bill.

I have now briefly to refer to a matter affecting the relations of the Society with the several branches of the building trade in Aberdeen. As we all know, each branch has its separate association (with the exception of the Slater trade, to which reference will be made presently), and perhaps if there is one thing more than another that these associations are agreed upon, it is that architects, in inviting tenders for contract work, should do so from the members respectively of each, to the exclusion of all who are non-members. And with this view I think the Society has no inclination to disagree. So long as every duly qualified master tradesman is eligible for admission to the association we regard such an arrangement as reasonable and just. But we go further, and argue that it should be reciprocal. Ours also is an association whose object is the protection and advancement of our calling, and no one who possesses the necessary qualifications is refused admission to its membership. With the object therefore of establishing, on clearly defined terms, an understanding on the matter, in the summer and autumn of 1900 the Council of our Society, having prepared a draft minute of agreement, held several meetings on the subject with a committee of the Master Builders' Federation, when the various points were fully discussed. Generally speaking the representatives of the several associations concurred in the view of the Society as to the desirability of some such mutual arrangement. It could not be said, however, that on the part of the Federation as a whole there was evidence of any inclination to fall in cordially with the proposal, and after further negotiations, which continued down to the early months of 1901, the Society resolved—I think wisely—not to press it. The matter accordingly was allowed to drop for the present, to be taken up again, I hope, at no very distant date, and carried to a successful issue.

Associated with the subject just referred to is the matter of contractors preparing plans and doing other work which properly falls to architects only to perform. For a long time it had been felt by architects in Aberdeen that on this ground they had just cause of complaint against certain contractors, and now and again efforts had been made, but with only partial success, to have the practice discontinued. Believing, however, that something might still be done in this direction, early in 1901 our Society took the matter up, and, as the result of its action, I am glad to be able to put on record that a satisfactory understanding was come to, the contractors who were communicated with on the subject readily agreeing to fall in with the view of the Society, and discontinue the practice complained of.

I come now to refer to the matter of the Slaters and their rival associations. In February, 1901, a number of master slaters in Aberdeen submitted to our Society a proposal for the adoption of a uniform code of measurement of slaters' work, and this was agreed to, on the understanding that the slaters were to form themselves into an association, and undertake to tender only to members of the Society, who, in their turn, were to send schedules only to members of the association, or others who should afterwards join it. In May following, however, it transpired that certain master slaters, other than those just mentioned, had also formed themselves into an association, and claimed to be recognised by the Society equally with the other. This situation the Council endeavoured to meet by strongly urging the advantages of amalgamation, and several conferences took place between the Council of our Society and the representatives respectively of the two associations with the object of bringing about this result. All, however, to no purpose, and later on—towards the end of the year—it coming to the knowledge of the Society that certain duly qualified members of the slater trade who had applied individually for membership had been refused admission to No. 1 association, the Society considered it expedient to terminate the agreement with it, members thereupon becoming free, as formerly, to use their discretion as to the slaters to whom schedules should be issued.

In October 1901 the Master House Carpenters' and Joiners' Association and the Operatives' Society came before us with a complaint that of late years a good deal of work properly falling to joiners to execute had been done by cabinetmakers, and asking the Society to co-operate with them in redressing the grievance, by undertaking in future not to send schedules to cabinetmakers for the class of work in question. The subject was fully discussed at several meetings held for the purpose, but after full consideration of the whole question the Society, while agreeing that the joiners had some ground for dissatisfaction, was unable to see its way to come under any specific obligation in the matter.

From time to time the desirability of adopting a fixed schedule of professional charges had been under consideration by the Society, but no active steps as yet having been taken in the matter, in September 1901 the Council drew up a draft scale of fees, &c., which having been considered at several meetings, and revised in January 1902, a general meeting of the Society was held, when the revised schedule was submitted by the Council for approval, and unanimously adopted. This, our recognised code of professional charges, which, it is to be noted, is substantially the same as that of the Royal Institute, I venture to hope members, by conforming in all cases to its terms, will loyally act upon and uphold.

Early in last year the Council of our Society was asked by our Dundee friends to nominate three of its members to adjudicate on the designs and drawings submitted in competition in connection with the syllabus of their Institute. This request, I need hardly say, was cheerfully complied with, and the award, I have reason to believe, was regarded by the Institute as quite satisfactory.

In addition to the matters already mentioned, during the year just past the Council has had under consideration a proposed form of model schedule prepared by the Master Plumbers' Association. This was carefully revised and several alterations suggested and agreed to, but no complete agreement was arrived at, and it is to be noted that the model schedule recently issued by the plumbers, whatever its merits may be, is not to be regarded as representing in every particular the views of the Society on this question.

Of the several matters, however, which have been dealt with by the Council during the past year, the most important, undoubtedly, is that which engaged our attention at an earlier stage of the meeting this evening. As you are aware, the idea of the adoption by our Society of a uniform schedule of general conditions applicable to building contracts is no new one. It was mooted not very long after the Society was first formed, but at that time there was some talk of a federation of the several Scottish societies, and the preparation of such a schedule for the use jointly of all. In view of this the proposal was allowed to drop, to be revived, however, some few months ago, when the matter was taken up by our Council, and by successive stages advanced to the position in which it came before you tonight. In connection with this, it remains for me now only to congratulate the Society on having unanimously adopted the proposed schedule, and I may add that it is a source of gratification to me, personally, that a measure which promises to be of much practical utility to the Society should have been carried into effect during my term of office as President.

I have come now to the end of my review of the leading events in the history of the Society during the first five years of its existence, and rapid and imperfect as the survey has been, I think we are entitled to look upon it as affording evidence of much useful work, quietly performed, and as presenting a record which realises not inadequately the objects for which the Society was established. While this is the case, however, it does not follow that our Society, as it exists now, is incapable of improvement. On the contrary, it is not difficult to conceive several directions in which its constitution and scope might with advantage undergo alteration. In respect to our rule as to membership, for example. As you are aware, at present the Society consists of one class of members only—viz. architects possessing certain qualifications as to training, &c., and practising on their own account in Aberdeen. Now, while no doubt something may be said in favour of such a limitation, for some time I have been inclined to the opinion that, on the whole, we should do well to widen our circle, to the extent at any rate of embracing a second class, who might be styled Associate or Student Members, and include assistants of members, and probably also pupils. Whether, while we are about it, it would be judicious to go a step further, and include under the term Honorary Members a third class, consisting of persons specially interested in the study of architecture or any of the allied arts, but not professionally engaged in practice as architects (as in the case of many of the other Allied Societies), is perhaps more questionable, although personally I should be inclined to regard favourably such a proposal. While we could have nothing to lose by it, in all probability we should be the gainers by the arrangement. At all events, the whole matter is one worthy of consideration, and I would suggest it as a suitable subject to be taken up and dealt with at an early date by my successor in office and the new Council.

Then there is another direction in which the Society might usefully, I think, do more than it has yet done or attempted. Than the architectural profession I suppose there is no calling the nature of which more imperatively demands for its successful pursuit a thorough and systematic early training, yet I think I am safe to say there is none whose members, speaking generally, are less efficiently equipped in this respect. Much might be said on the subject, but I will not dwell on it now. What I wish to suggest is the possibility of our Society doing something, however little, to assist in the education of pupils of members. As to the form such help might take, whether it would be by way of a course of lectures, the establishment of some system of examination, the offer of prizes, or some other way, it is not for me to speak now. I merely make the suggestion, and if it is thought there is anything in it the idea can be put into shape. I cannot leave the subject, however, without some reference to what is being done in this way in Aberdeen at the present time. I allude to Mr. Irvine's evening classes at the School of Art in connection with Gordon's College. This is a course of tuition, specially adapted for pupils and junior assistants, which supplements in an important degree the instruction obtainable by attendance at the regular classes in the College curriculum, and as such I venture to commend it to the Society as eminently deserving of our sympathy, and, should opportunity occur, active co-operation and support.

In this connection I ought to refer also to the advantages to architectural students in Aberdeen of the opportunities afforded them of examining the Royal Institute prize drawings and testimonies of study. I need hardly say that in an educational sense the study of this very interesting collection of drawings annually is of great value, and as a Society I am sure we gratefully acknowledge our indebtedness to the Institute for the loan of them. May I, however, without presumption, suggest that the Royal Institute of British Architects might do rather more than this? Several other ways occur to one in which that body might exert its influence for the benefit of such societies as ours. For example, there has been present to my mind for some time the idea of a travelling lectureship in connection with the Institute. I mean some arrangement under which the various centres would be visited in rotation at stated periods, and a lecture delivered before the local society, combined perhaps with some system of examination for the benefit respectively of the assistants and the pupils of members. Such a plan, if properly worked out, I feel sure would prove a most useful one—to the several Allied Societies in the first place, but in a wider sense to the profession generally, in respect that it would help to knit together the various centres in a closer bond of union and fellowship, while tending to keep all more in touch—in a real sense more closely in alliance with the parent Institute, and so assisting to bring about that complete union among practising architects in the kingdom which in the highest interests of our profession is for many reasons so greatly to be desired.

THE SHEFFIELD SOCIETY.

Mr. R. E. Leader, in a recent lecture delivered before the Sheffield Society of Architects and Surveyors, on "Surveyors and Architects of the Past," said that practically there were no architects in Sheffield until sixty or seventy years ago. Taking a survey of their older public buildings, one was struck by the regularity with which, whenever anything more important than dwelling-houses within the scope of intelligent masons was required, architects were imported from other places. The explanation was found in the geographical position of Sheffield and the humble standing of the inhabitants. When St. Paul's Church was built, in 1719, Mr. Platts, who erected Wortley Hall, was called in; when the Parish Church had to be repaired, in 1777, Mr. Thomas Atkinson was fetched from York. To Mr. Charles Watson, of Wakefield, was entrusted the Waingate

Town Hall, 1805, and the Infirmary (1793) was entrusted to Mr. John Rowstone, of Birmingham. Woodhead and Hunt, of Doncaster, were the architects for St. George's Church in 1821, and the Surrey Street Masonic Hall (1823), and the Grammar School in Charlotte Street in 1825. Carver Street Chapel (1804) was the work of a circuit minister who had been intended for an architect, and so on. Some of those outsiders did establish themselves in the city, but a race of native architects was rising, and as the surveyors had come from schoolmasters, so the architects came from builders. That was strikingly so in the case of the Drurys and Flocktons. It was not until 1825 that Edward Drury and Sons were designated architects as well as builders. In 1833 William Flockton laid aside the cap and apron and established himself as an architect. The Mount and Wesley College (1836) showed his native talent. There was, too, Mr. Samuel Worth. The name of Mr. J. G. Weightman first appeared in the Directory for 1833, and in 1837 Mr. M. E. Hadfield was at the Corn Exchange. The elevating influence they exercised on the architectural renaissance of the town was reinforced in 1845 when the late Mr. Thomas James Flockton brought to his father's office a fresh knowledge obtained from a larger sphere than the city. With the firms of Weightman and Hadfield and Wm. Flockton and Son opened a new era in the architectural development of the city, and their influence was unmistakably stamped on its streets. The advance marked in their career would be shown by a comparison of St. John's, Park, with St. Marie's, Norfolk Row; or Holy Trinity, Wicker, with St. John's, Ranmoor. Despite their small beginnings the architects and surveyors of Sheffield could hold their own against all comers in sound practical knowledge, ingenious and ever bold adaptation of means to the end, viz. the mastery of design and artistic feeling.

THE GLASGOW INSTITUTE.

The Alexander Thomson Memorial Studentship.

Particulars of this Studentship, which is in the gift of the Council of the Glasgow Institute of Architects, and is competed for every three years, were given in the Journal for 8th February 1902. The following are the awards:—First Prize, £60, to Mr. Wm. Beattie Brown, jun., of 15 St. Bernard's Crescent, Edinburgh; Second Prize, £20, to Mr. Arthur D. Nicholson, 19 Royal Crescent, Glasgow. There were five competitors.

London District Surveyors.

At the last meeting of the London County Council the Building Act Committee brought forward the following recommendations:—

That a new district of Kensington, with its boundaries coterminous with those of the royal borough of Kensington, be formed by uniting the districts of North-west Kensington and South Kensington, and transferring certain portions of these districts to other districts.

That in order to give effect to the above recommendation, the Queen's Park Ward of the Borough of Paddington and the late detached portion of St. George, Hanover Square, on the north side of Bayswater Road, be added during the Council's pleasure to the district of Paddington, but that Mr. Meeson, the District Surveyor for Paddington, be required to pay to the district surveyors who began the supervision of the works transferred to him a proportionate amount of the fees chargeable on such works, calculated on the extent to which they have been supervised by them, and that the portions of the parishes of St. Margaret and St. John the Evangelist, Westminster, north and south of Kensington Gore, and Knightsbridge, at present in the districts of North-west and South Kensington respectively, be added to the district of St. George, Hanover Square North.

That the district of Sydenham be divided into two districts, and that the line of division be the Nunhead and Shortlands Railway to Stumps Hill, and thence by a line along the centre of Stumps Hill to the county boundary, and that the western district be designated Sydenham, and the eastern district Catford.

Mr. George Legg has resigned his appointment as District Surveyor for the district of West Hackney.

MINUTES X.

At the Tenth General Meeting (Ordinary) of the Session 1902–1903, held Monday, 16th March 1903, at 8 p.m., Mr. Aston Webb, A.R.A., F.S.A., in the Chair, with 42 Fellows (including 12 members of the Council), 60 Associates (including 2 members of the Council), 2 Hon. Associates, and numerous visitors, the Minutes of the Special and General Meetings held on 2nd March 1903 [p. 248] were taken as read and signed as correct.

The President announced the decease of Professor Thomas Roger Smith [*F.*], and having referred to his long and active service for the Institute, and to the affection and esteem in which he was held by members, moved, and it was thereupon

> Resolved, that the Royal Institute of British Architects desires to express its deep regret at the loss it has sustained by the death of its esteemed Fellow, Professor T. Roger Smith, and to record its high appreciation of his services to the Institute; also that a letter of sympathy and condolence with his family in their bereavement be addressed to them on behalf of the Institute.

The Secretary read a letter from General Sir Dighton Probyn, Keeper of His Majesty's Privy Purse, stating that His Majesty approved of the election of Mr. McKim as Royal Gold Medallist for the current year.

The following members attending for the first time since their election were formally admitted by the President—viz. William Chasen Ralph (Wigan), *Fellow*, and Horace White, *Associate*.

Mr. Charles Hadfield [*F.*] read a Paper on Westminster Cathedral, which was illustrated by lantern slides, and a discussion having taken place, at the conclusion thereof a vote of thanks was accorded to Mr. Hadfield by acclamation.

The proceedings then closed and the Meeting separated at 10 p.m.

FIRE PREVENTION AND FIRE RESISTANCE.

By Horatio Porter [*A.*], M.A.Cantab.

Read before the Royal Institute of British Architects, Monday, 30th March 1903.

In dealing with a subject of such universal importance, I cannot hope to say anything new to the members of the Institute. But it is sometimes possible to gain fresh lights on a familiar problem by gathering together its different features to consider them in their bearing one upon another. This is perhaps specially the case with so complicated a question as this of fire prevention, and one in which so many conflicting interests are involved.

I propose to consider, first, to what extent the prevention of fires can be aimed at, or how far our efforts should rather be directed towards lessening their destructiveness. I shall then endeavour to touch briefly on the various means which can be employed for both purposes, with a view to comparing the chief characteristics of these, their relative advantages, and also any practical difficulties in the way of their employment. My object throughout will be to bring forward for more prominent discussion than has perhaps yet been given to it, the question not only of the number and value of methods already devised for fire protection, but also of the extent to which these are available for practical use.

I.—FIRE PREVENTION.

It is well to form an idea at the outset as to how far it is really *Fire Prevention* that we are aiming at. We cannot hope, for the present at any rate, to put a stop to all destructive fires, and the large proportion of "unknown" and "personal" causes which figure on all fire returns would seem to show that by far the larger number are beyond our power to prevent. My own experience in the matter is roughly summed up in the following table:—

Causes of Fires.	Per cent.
Faulty construction of flues, hearths, and grates	15
Defective gasfittings and electric-light installations, and faulty lamps	10
Other causes (curtains, clothes, children, personal carelessness, and incendiarism)	60
Unknown	15
	100

These figures are of course only a rough approximation, which it would be interesting to compare with the experience of others. The only important point, however, for the moment, is to note the comparatively small number of fires which are literally within our power to prevent. The "unknown" causes can obviously not be dealt with, nor are the "personal" ones much more satisfactory. I have made no attempt in these latter to distinguish between accident and design, as every assessor knows the impossibility of obtaining conclusive evidence of incendiarism, however suspicious the circumstances may appear. I have seen incendiary fires estimated at one in seven both in American and English tables, but, personally, I should not be prepared to put the proportion quite so high. I have been very much struck, in looking through my own tables of fires surveyed this year, to find what a large proportion—rather more than one in nine—have been caused by children. This seems to suggest that a certain number, at any rate, might be prevented by more careful training of children in the matter. I should personally be inclined very strongly to support the idea, which has been brought forward of late, that a course of instruction in fire dangers and precautions should be included in all children's education, from the School Board upwards.

The bulk of these "personal" dangers are, however, clearly beyond our control. The fires due to mechanical or constructional causes are the only ones which we can hope definitely to prevent. And these are well worth careful consideration, on account both of their importance in many cases and also of the large extent to which they can be guarded against. A striking proof of this is afforded by the Glasgow fire returns for the years 1876–86, *i.e.* before the introduction of the Buildings Regulation Act. These tables give 27·8 per cent. of fires as due to defective hearths and flues, as against 9·65 per cent. in London during the same period.

I will touch briefly on the chief points to be noted with regard to these constructional, and therefore "preventable," causes of fire.

1. DEFECTIVE HEARTHS AND FLUES.

These are the most important of all constructional causes of fire, on account not only of their frequency, but also of the serious amount of damage which may result. This is specially the case in country mansions, where fires not immediately extinguished usually have time to spread beyond control. Defective flues and hearths are found to account for a large majority of fires in the country; especially, of course, in old houses. I note this as showing the importance of insisting upon all possible measures of safety in the construction, repair, or alteration of chimneys and flues in country houses. With reference to chimneys, especially in old houses in London, the flues which were sound enough for the old-fashioned open kitchen range are found defective, in respect of their withs and chimney-backs, for the modern close kitchener, which creates great and concentrated heat.

2. TIMBER MANTELPIECES

constitute another source of risk from the way in which they are frequently fitted with the metal of the grate touching the wood. In fixing the mantelpiece there is often left a small pocket in which soot accumulates, and may become ignited. I myself lately came across a new and very expensive London mansion which was set on fire in this way. Fortunately the outbreak was soon discovered, and extinguished without great damage.

3. WALL-PLUGS FOR JOINERY

must also be regarded as sources of danger when near flues, especially in old houses where the pargetting of the flues has worn away, and the joints of the brickwork have become open.

4. UNUSED FIREPLACES.

Another risk, though not very frequent, is worth mentioning, as it is often liable to be overlooked. I refer to the practice of boarding up unused fireplaces, or making them the receptacles of scraps of paper and other inflammable materials, which may easily be set on fire by a spark falling down the chimney from some other flue. Even without the extra risk of the paper, the soot which is sure to fall down and accumulate has been known to cause a fire. Section 88 of the Glasgow Building Act deals with this point in the following regulation : "Every fireplace-opening or chimney-opening which contains no grate or stove, which is not used as a fire-place, or which may hereafter become disused as a fireplace, shall be stopped up with incombustible material, and the chimney-top shall be stopped up with like material. The provisions of this section shall apply to new and existing buildings other than dwelling-houses."

5. GAS AND GAS-FITTINGS.

There are comparatively few fires due to these causes, in my experience—perhaps, 6 per cent. Also in the majority of these cases there is no actual fire damage, but only explosions.

6. ELECTRIC-LIGHT FITTINGS.

I have known few losses caused by these; but it must not be overlooked that the general installation of electric light is still recent. We have yet to learn whether danger is to be found when the wiring and fittings become old.

With regard to causes of fire generally, it is worth noting that it is in the most destructive outbreaks that these are hardest to trace. The proportion of fires classed as "unknown" is much larger in serious than in slight cases, owing to the fact that all evidence from which one might learn the origin has been destroyed.

II.—FIRE RESISTANCE.

Fire Prevention, strictly speaking, is, as I have tried to show, only practicable in about 25 per cent. of our present outbreaks. It is therefore obvious that the question which claims our most immediate attention is that of *Fire Resistance.*

Fire resistance is of course a relative term, and the degree of perfection to which it can be carried depends not only on the building itself, but also on its contents and immediate surroundings. This has to be kept in mind in considering the question, as it is useless to expect owners to spend large sums on "fireproof construction" which they are perfectly aware will benefit their neighbours rather than themselves.

The two chief elements in fire-resisting construction are :—

(*a*) The materials used.
(*b*) The general design of the building and details of construction.

A.—Materials used in Fire-resisting Construction.

It is unnecessary to enter into a detailed discussion of different building materials, which are all well known to members of the Institute. I propose therefore only to touch upon such features of each as may affect the present question.

1. *Brickwork.*

With regard to building materials, there is no doubt that good brickwork is the best known to us for fire resistance. The chemical composition of the clay is the great element in determining both the fire-resisting and weight-carrying properties of a brick. These depend chiefly on the proportions of silica and alumina in the clay, and, secondly, on the oxide of iron, lime, magnesia, potash, &c. "Uncombined silica, if not in excess, is beneficial, as it preserves the form of the brick at high temperature. In excess it destroys the cohesion, and renders the brick brittle and weak. Twenty-five per cent. of silica is a good proportion." *

2. *Terra Cotta.*

Terra cotta, used for structural purposes, may be porous or hard-burnt. Porous terra cotta is made by the addition of some combustible material, such as sawdust or finely chopped straw, to the pure clay, which is then burnt under great heat. By this means the straw or sawdust is consumed, leaving the clay in a porous state, and thus reducing its weight as a building material. Hard-burnt terra cotta is made from pure clay without the addition of any combustible substance. Whereas the porous form is in itself non-conductive of heat, the hard-burnt terra cotta has to depend greatly on the hollow spaces with which the blocks are moulded, and is liable to crack on being suddenly cooled. On the other hand, the porous make does not carry weight so well as the solid; and if the straw or sawdust has not been thoroughly burnt out of it, there is also a danger of disintegration under the combined effects of fire and water. Any unconsumed fibre that may have been left serves to absorb the water, and if this is poured on when the terra cotta is greatly heated it is converted into steam, and causes damage by expansion. But for the protection of girders or columns, where it has little or no weight to carry, the porous form seems the best.

3. *Mortar, Plaster, and Cement.*

The following figures are the result of a series of tests with cement mortars for the Sanitary District of Chicago in 1896. These tests were made with briquettes, composed some of neat cement and some of mortar made of cement and sand. After having been heated to a great temperature they were allowed to cool gradually, and were then broken in the testing-machine. The average results were as follows :—

Percentage of loss of original strength due to heat exposure.

Natural cement.—Neat, 89·3, mortar 1 to 1. 61·0.
Portland cement.—Neat, 58·2, mortar 3 to 1. 69·6.

From these experiments the following opinion was deduced :—"It may be that concrete floors will, after a fire test, hang together under heavy loads, but these experiments indicate that they are nevertheless weakened. The extent of weakening may depend upon the duration of the application of the heat. In any event it does not appear that cement-mortar can be relied upon satisfactorily to resist high temperatures. It may do so in some cases where the structure before heating was inordinately strong." †

It is probably true that common lime and sand mortar in small quantities has greater fire-resisting properties than any other plastic material, and would be a better protection than cement mortar if it were strong enough to be used to a thickness of, say, four inches or more.

I was very much struck a year or two ago by the way in which an ordinary plaster ceiling had checked a fire. I had to visit Jesus College, Cambridge, to inspect a damage in one of the old buildings. The fire had broken out in the upper floor, and had burnt away the ceiling. But above this was a ceiling of much older date which had sagged a great deal Obviously, the lower one had been put in for the sake of appearance. The old ceiling was of very thick plaster, and had checked the spread of fire. Otherwise the roof timbers must have been attacked, and the whole range of buildings would probably have been destroyed, and the old chapel adjoining seriously endangered. I was greatly interested, by the way, to note that the old ceiling had been made on little bundles of rushes fixed to the ceiling joists in place of the ordinary wood laths.

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* *A Treatise on Masonry Construction*, J. O. Baker.

† Freitag, *Fireproofing of Steel Buildings.*

4. *Concrete.*

The above-mentioned tests with Portland cement have been taken by the upholders of terra cotta to prove that concrete is unreliable in great heat. I do not myself consider this opinion to be justified, as these tests had reference only to tensile strength. Tests have been made with concrete in which the material has been subjected to as much as 1976° F. for several hours, and has been allowed both to cool slowly, and also suddenly, by application of water. The report shows that generally the concrete composed of sand, gravel, or stone mixture crumbled, or gave signs of great weakness, while that composed of cinders "showed good coherence," and "did not suffer" by wetting while hot. The highest degree of coherence was found in a mixture of 1 part cement to 7 of coarse cinders. These tests would suggest that where concrete has been made with care and knowledge it will stand very high temperatures for a long period, even with the application of cold water.

5. *Stone.*

I feel it is unnecessary to say anything on this material, for it is too well known that all stones will fly or disintegrate when subjected to even only moderately high temperatures.

6. *Wrought Iron, Cast Iron, and Steel.*

Although non-inflammable, none of these are good fire-resisting materials when unprotected, and the necessity of casing them in some fireproof covering is now universally recognised. I shall touch upon different kinds of covering later on.

Unprotected iron rapidly absorbs heat, and although the material itself may not have suffered permanently from the application of extreme temperature, yet owing to its great conductivity it may by expansion cause serious damage to the building. It is well to remember that steel will expand 1 inch in 125 feet for every 100° F.

Cast-iron, however, will stand and carry its loads after having been subjected to a considerable temperature.

7. *Wood.*

In dealing with the question of fire-resisting construction, the fact must not be overlooked that in the fitting-up of the building for its use a considerable amount of combustible materials must be employed. It is obviously important that these should be used as sparingly as possible. Shelves, for instance, might in many cases be made of wire netting supported on metal uprights; and the counters in large stores might be constructed on the principle of fireproof doors and shutters. The counter-top itself would probably have to be of wood, but the other parts could have a wood core covered with sheet metal.

These are important points to consider, as inflammable partitions, screens, counters, and fittings of all kinds may in themselves make a fire fierce enough to damage the best constructed fire-resisting buildings. It is, however, clearly impossible to eliminate the use of wood altogether, and it is therefore worth while to inquire into the possibility of rendering it non-inflammable.

The process is well known by which wood and even textile fabrics can be treated with this object, and careful tests seem to prove that they can be made efficiently fire-resisting. It is also claimed that the wood is not injured for structural purposes, and that the effect of the treatment is permanent. But the expense is a somewhat serious item, the process adding about 30 per cent. to the cost of joinery in soft woods. Although it might be employed to advantage in important buildings, one can hardly hope to see it come at present into general use.

A fact which might well be made more use of than it is at present in building is the excellent resistance which timber in balk will offer to even a severe fire. With large beams I have very seldom found fire to have penetrated more than one inch.

B.—Design, Construction, and Fittings.

These are the most important questions of all in the problem of fire-resistance. Inflammable materials may be the means of seriously injuring a "fireproof" building; but errors in design and construction will cause what might have been a small fire to spread over an unmanageably large area, and to gain force enough to work practically unlimited destruction. The well-known "Horne Building" fire in Pittsburg was a striking instance of this, as also, on a less destructive scale, the recent fire at the Haymarket Stores. In both of these cases the fire spread through a lift shaft, which served as a flue on a large scale; and similar cases might, as we all know, be instanced in great numbers. To my mind the problem most immediately before us in this question of fire-resistance is the treatment of all such vertical shafts or openings in the interior of buildings.

The different purposes for which such well-holes are requisite render different treatment necessary for each. It will be, therefore, simplest to consider them separately.

1. *Well-holes and Light Shafts.*

In many instances great care is taken to build floors fire-resisting, and to cut off stairs from large areas, while unprotected windows are left opening into narrow well-holes, thus forming a vulnerable spot for attack.

Well-holes are usually enclosed over the ground-floor story by skylights, the glass of which soon cracks and breaks with the heat, and the well-hole becomes a large flue, causing an immense up-draught. It does not seem to me possible to eliminate entirely all shafts from large factories and warehouses, especially in crowded districts where space is very valuable. It is therefore most important to see by what means the dangers inherent in such features may be reduced.

This, I think, can to some extent be done by a more universal use of shutters. In factories and warehouses this is quite possible, for business terminates at a definite hour of the day, and the whole building is under one management. But in office property, where there are many tenants, any systematic method of closing would be found very difficult and would cause great inconvenience to the occupants.

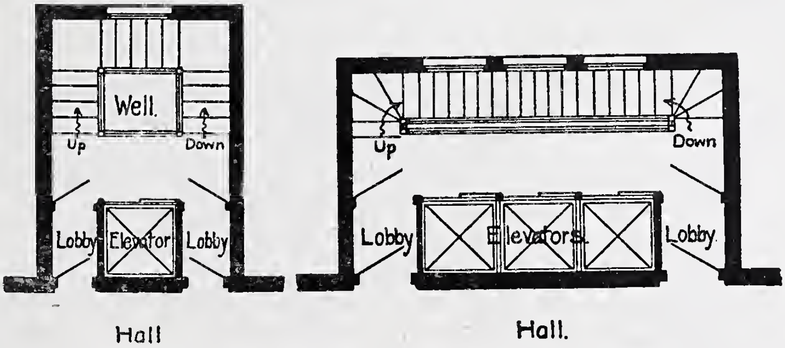
For instance, the Vanderbilt Building in New York was set on fire by the burning of the Nassau Chambers, which was about 40 feet distant from a wing of this building. The flames broke through the windows, all of which were fitted with iron shutters, not one of which was closed.

The use of wire glass in iron frames for skylights in well-holes seems to be very desirable, helping to prevent the fire from bursting through from below or burning embers falling in from above. Wire glass is made by embedding in the centre of sheets of rolled plate glass, whilst incandescent, woven wire of one inch mesh in the familiar diamond form. The combination of the two materials forms a splendid substance to withstand not only great heat, but also the sudden cooling when water is poured upon it. The wire, being protected by the glass, holds the latter together even when cracked. This glass seems admirably suited not only for skylights, but also for warehouse windows overlooking narrow well-holes or streets, where the appearance is of small importance.

It is contended by some that skylights should be made of thin glass, thus allowing the quick escape of smoke and gas. Smoke in large and dense volumes is inflammable and may cause fire to spread from place to place. It may also from its denseness prevent the firemen from locating the seat of the fire. I personally am inclined to think that more danger is to be apprehended from spread of fire, than the possible disadvantage to the firemen by the presence of dense smoke.

2. *Well-holes for Stairs and Lift Enclosures.*

My remarks on well-holes for light are in many ways applicable to these features. Judged solely from the standpoint of fire-resisting design, the usual position of staircases and lift shafts in mercantile offices and hotels is wholly wrong. Great advantage would be obtained if such well-holes could be enclosed by fire-resisting walls, with access to large floors or corridors by doorways only, which could be fitted with fire-resisting doors. The walls enclosing well-holes for stairs and lifts should be carried through and above the roof in the same manner as party walls, and the skylights over should be of plate glass (not less than a quarter inch thick) or preferably of wire glass.



PROPOSED ARRANGEMENTS OF ISOLATED STAIR- AND ELEVATOR-WELLS.*

It must, however, be admitted that by such isolation of the staircase much of the internal effect of a building would be sacrificed, and the question must reduce itself to whether appearances must be sacrificed for the rather remote chance of fire.

After the great Pittsburg fire, the appraisers in a report recommended as follows:—"We would advise that all stairs and elevator openings be enclosed on all sides (excepting the doors) with tile protection, and with an extra rolling shutter which can be closed when not in use, and at the time of fire."

But to me fireproof doors would appear preferable to shutters. These latter are often found not to be in working order when most needed, nor can they be easily opened again for the escape of a person who might have been unfortunately cut off by the premature closing of the shutter.

Lift doors in large retail stores would necessarily require glass panels in order to see whether customers are waiting to be carried, but such panels could be of small dimensions and be of wire glass. In order to check the rush of flame up a shaft a system of automatic sprinklers might be fitted round the sides of the opening near the roof, or perhaps perforated pipes in connection with an outside standpipe might appear preferable.

As to the material of the stairs themselves, it is well known that stone stairs crack and break after being subjected to a comparatively slight heat on a sudden application of cold water. Teak or oak steps of 2-inch tread and riser would possibly resist fire for a longer period.

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* From *The Fireproofing of Steel Buildings*, by J. K. Freitag, C.E. Chapman & Hall, Ltd. London, 1899.

But in cases where stone steps are used and supported by iron carriages at each end, a safe staircase might be made by firmly fixing under the treads, from carriage to carriage, an iron plate of openwork pattern, which would support the tread even when fractured.

I am inclined to think that a staircase made of oak or teak, with 2-inch treads and risers and soffit, and the spandrels filled in solid with some hard wood, would be found the most reliable.

3. *Subdivision of Large Buildings.*

One of the most important considerations is the subdivision of large areas. A fire in a large undivided area increases both in intensity and volume with much more rapidity than in a smaller one. There is no doubt much difficulty in arranging such subdivisions in large warehouses, factories, and stores. In large retail stores unobstructed areas are considered of great value, and in factories and warehouses large spaces afford convenience for the insertion of machinery and the ready handling of materials.

In domestic and even in office property there is not the same difficulty, for the areas will of necessity be divided into rooms or offices, and this can be done with fireproof partitions.

4. *Fireproof Floors.*

There are now many excellent systems for the construction of fire-resisting floors, all well known to members here. The two main divisions into which the systems may be classed are:

1. Concrete. 2. Terra cotta or brick.

Experts differ greatly as to which makes the better floor, but after considering many opinions one comes to the conclusion that each may be good or bad according to the quality of the materials and workmanship.

The Engineering News, dated February 1897, in commenting on the New York tests, says the following:

> Our knowledge of both the strength and the fire-resisting qualities of tile floors is confined almost entirely to the results of experimental tests. Many of these have been made, and their results may be fairly summed up by saying they have shown hollow tile arches, of good design and not too long span, to have a strength sufficient to be safe under any load likely to be brought upon them in any ordinary building; also, that their resistance to fire is entirely satisfactory, except that the dense tile is likely to go to pieces if struck by a stream of water when heated. This has been shown by actual fires in fireproof buildings of tile construction, as well as in experimental tests.
>
> Turning now to floors made up of cement concrete and steel, we know that properly designed arches of this material have an enormous strength, much above that of tile arches of equal weight and span. Until recently, however, there has been rather a small amount of knowledge as to the fire-resisting qualities of such constructions, and while many able engineers asserted that concrete would resist fire, other authorities denied it. We may fairly say, however, that this question has been effectively settled by a series of tests.
>
> . . . .
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> Some half-dozen tests have now been made of concrete floor construction, and although the conditions of the tests are exceedingly severe, not one of these floors has failed.

An important point to insist on is that no space should be left underneath the floorboards which might serve as a passage for fire, or to form a home for rats and mice. These animals have been known to carry into such spaces matches, oily waste, or other combustible materials liable to be ignited by steam pipes, or even by spontaneous combustion.

Wood fillets also are unnecessary even where wood floors are used—the nailing of such floors can be made directly into coke-breeze concrete. In warehouses, stores, and the like, it is very important for the floors to be watertight, and an arrangement of scuppers or spouts might be made to carry water off through the walls. These would be fitted with metal lids to open outwards, in order to prevent the inward current of cold air. This might be the means to some extent of preventing the damage by water to the floors below.

5. *Fireproofing of Columns and Girders.*

The main features for a satisfactory fire-resisting covering for columns and girders are:

1. The best non-conductor of heat.
2. Should be able to withstand the action of fire and water.
3. Should not break away from the column under the action of fire and water.
4. Should contain no joints through which fire could find its way.

The covering may be of plaster, concrete, brick, or terra cotta. It is hardly needful to remark that metal lathing should only be used where plaster is adopted for the covering material, and it is a good thing to first wrap the column with asbestos lining bound with wire. In mercantile buildings the column should be protected from the floor to a height of 4 feet by a metal guard, to prevent the fireproof covering being broken away by collisions with trollies and such like.

Where terra cotta is used for protection, the porous variety is preferable to the hard-burnt. The latter, as has been stated before, is likely to crack if water falls upon its heated surface. The porous form is a poor conductor of heat, and will withstand to a great extent the application of cold water even when very hot.

6. *Fire-resisting Partitions.*

These may be divided into three kinds—

1. Solid plaster partition.
2. Hollow plaster partition.
3. Terra-cotta or porous brick partition.

In America there is a good form of solid partition made. The studs consist of $\frac{7}{8}$ inch channel iron, 16 inches from centre to centre. These are secured at the bottom by nails or staples to a $\frac{7}{8}$ inch or 1 inch wood strip, which is laid on the concrete floor, arch or slab; and at the top by staples driven into the ceiling. Wire lathing, stiffened with $\frac{1}{4}$ inch solid steel wires or ribs woven in every 7 inches, is laced to one side of the studs with galvanized wire. The sheets of lathing are so placed as to make the stiffening ribs run at right angles to the studs. The partition is then plastered with some hard plaster or lime mortar gauged with plaster of Paris. This is applied in five coats. The total thickness of the partition is 2 inches, and the weight is 20 lbs. per square foot.*

A partition which withstood with excellent results a test made by the British Fire Prevention Committee was made of terra-cotta wired lathing fixed to the floor and ceiling, and covered with three coats of plaster on each side, in which plaster of Paris was incorporated. The partition was $2\frac{1}{2}$ inches thick when finished. The dovetail corrugated sheeting seems an excellent material for the foundation of a thin fireproof partition.

Of terra-cotta partitions little need be said, except that it is most important that all such partitions should start directly upon the masonry of the floor. The terra-cotta blocks, however, should be of sufficient width to secure stability. I feel that some of the sections suggested by various firms are not quite thick enough. A good section is one in which the blocks are moulded with grooves and tongues; by this means additional stability is given.

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* Freitag, *Fireproofing of Steel Buildings.*

7. *Insertion of Gas and Steam Pipes and other Fittings.*

Special attention should be given to protecting all openings made through floors for the passage of pipes for steam, gas, or any heating apparatus. This may be done by a metal sleeve to take the pipes; all open spaces to be stopped with asbestos or other fireproof substance. Care must be taken to leave not even the smallest channel through which a fire might spread.

It is hardly possible to insist too strongly on the necessity of protecting not only doors and windows but also smaller openings, such as are made for pipes, belts, shafting, and the like. These are often overlooked, because they are small and are probably not part of the original design.

A short time ago I had a singular experience of the spreading of a fire by means of these unsuspected danger traps. I inspected a loss in town, at a house about a hundred years old. I was told that severe damage had resulted. I inspected the ground floor, where the fire had broken out in a cupboard in the dining-room. From the appearance on this floor and on the next, only slight damage from fire, smoke, and water, seemed to have occurred. On the second floor I could trace nothing but smoke and water damage, and thought the loss much exaggerated. It was greatly to my surprise, when I came to the third floor, that I found the chief part of the roof burnt off. I was at a loss to understand how the fire could have spread from the ground-floor to the roof with so little damage to the intermediate floors. On further examination I found that the chimney-breast from the first floor upwards had been battened out to make the chimney openings central, thus forming a regular flue directly over the cupboard in the dining-room. A lamp not properly extinguished was shut up in this for the night, and had set fire to the contents near, and burnt through the ceiling into the space in the chimney-breast above. From this point the flames must have rushed up the vertical opening as up a flue, burning the studding on the way, and breaking out fiercely on the roof.

I do not consider that matters concerning the Fire Brigades come within the scope of this Paper, and, with regard to private apparatus as aids for fire-resistance. I propose only to say a very few words on the principal aids, namely:

1. Automatic alarms.
2. Automatic sprinklers.
3. Stand pipes and hose.

Automatic fire alarms usually depend on the fusion of a metal link, which causes an electric circuit to be made or broken: by this means the alarm is sounded. Some very interesting and highly satisfactory tests were made by the British Fire Protection Committee with the Pearson Fire Alarm in July of last year.

Manual apparatus is often fitted with the automatic fire alarms, so that the occupants themselves may on an outbreak of fire sound the alarm. These can also be used to give the alarm of a neighbouring fire.

Automatic Sprinklers.—For warehouses, factories, and wholesale and retail stores, and, of course, for all kinds of mills, automatic sprinklers are a great safeguard.

To make the installation effective, the building must be open in construction, so that the water from the sprinklers can reach the whole of the floor; the pipes must be of sufficient size, and must always be under pressure; and the water supply must be of sufficient quantity and pressure.

The sprinkler heads should be placed on the ceiling every 10 feet, so that each head will have to cover 100 square feet.

I have tried in the foregoing remarks to bring forward one by one the main features in the difficult problem of fire prevention and resistance. My object in this has been not to enter into any detailed discussion of these, but to bring them together into focus, so to speak, so as to make it easier to estimate their bearing on one another and on the whole question. For the more carefully one goes into it, the more apparent it becomes that the real problem is not to be solved merely by devising further improvements in the details of materials, construction, or design. We are, as I have tried to show, already admirably equipped in these respects, and modern inventions are continually adding to our resources. If fire resistance were the only point to be considered in building, there would be practically no insuperable difficulty in securing it. But the questions of appearance, expense, and space demand at least equal attention. Owners of hotels and large retail stores require first and foremost a showy effect; while in city warehouses economy of space is of paramount importance, and in all cases the question of cost naturally comes to the fore.

Fire-resisting construction, in its present stage of development, does undoubtedly involve a considerable increase of expenditure, coupled in many cases with a sacrifice both of space and of artistic effect. The practical problem, therefore, before members of our profession, is how best these drawbacks may be minimised.

One cannot doubt that there is still much to be done, in the way of design and construction, to introduce the fire-resisting features already suggested without undue sacrifice of effect or increase of cost. A discussion on this subject would be of great interest, and I would venture to suggest that a useful basis for it might be afforded by giving as a subject for a students' competition the designing of a hotel, retail store, or mercantile house, on fire-resisting principles, having special regard to internal effect in the first two cases, and in the third to economy of space.

I should like to note, in conclusion, that I have purposely refrained from all consideration of Building Acts, or of Insurance, as being beyond the scope of this paper.

REPORT OF THE SCIENCE STANDING COMMITTEE ON THE FIRE OFFICES' REGULATIONS FOR STANDARD FIRE-RESISTING BUILDINGS.

Read by Mr. H. D. Searles-Wood [*F.*], Hon. Secretary of the Committee,
at the General Meeting, Monday, 30th March 1903.

In 1898, after the Cripplegate fire, a conference of architects and insurance surveyors held two meetings with a view to ascertain what reduction of premiums the Insurance Companies would allow if buildings were constructed under the following conditions:—

1. If buildings are flat-roofed, with hard fire-resisting material.

2. If floors of iron and concrete, constructional ironwork covered with fire-resisting material, say as required by the London County Council regulations, floors connected only by staircases, which, with the landings, to be enclosed by fire-resisting material, such as cement on metal core, now much used; lights in these partitions to be sheet plate; teak or oak doors, and treads and risers.

3. Similar floors, but pierced for lift, enclosing walls of brick rising through roof, and openings on each floor protected by light iron shutters.

4. Wood floors and joists pugged four inches between joists with some fire-resisting material, pierced for staircases, constructed as in No. 2.

5. Pugged floors as above, with lift in addition, lift enclosed with fire-resisting partitions as staircase in No. 2, and with iron doors.

6. If the lighting areas or well-holes common to buildings in different occupations be carried down to the basement floors and not roofed over by skylights on the ground floor.

7. If windows in front and back wall fitted with iron sashes and frames but left without shutters.

8. If opposing windows, within say twenty feet, are fitted with iron shutters or some fire-resisting material for blinds.

Any other heads or points which the Offices may desire to note or which are set out in existing tariffs.

At a second meeting a tariff was submitted in which a normal building with a minimum rate was given, and the rate increased to meet ten or twelve different modes of construction.

This tariff appeared to be in form and principle exactly what the Committee had been endeavouring to obtain from the Offices, and they were strongly of opinion that if the insurance offices regulate their premiums on any principle whatever and agree upon a tariff among themselves, it is only fair to the insurers and their advisers that such tariff with clear definitions should be available for public use, but this was not agreed to.

Since this conference some rules for standard fire-resisting buildings have been issued by the Fire Offices Committee, and have appeared in our JOURNAL,* and the Science Committee have given them careful consideration.

The rules are numbered I. and II. No. I. applies only to cotton mills, flax mills, woollen mills, and worsted mills. No. II. gives rules for standard fire-resisting buildings, not including those scheduled above.

From a careful consideration of these rules it would appear that they have been drawn up without reference to the London Building Act 1894, and in several points the rules differ from the provisions of the Building Act.

It would greatly facilitate business if these rules could be made to accord with the Building Act, and if the Fire Offices Committee would draw up a tariff which would be available by the public where the normal building should be the type allowed under the Building Act, with ten or twelve varieties of construction or arrangement, whereby the normal rate would be reduced.

We recommend the Council to approach the Fire Offices Committee, to ascertain whether they would meet a Committee of the Institute to discuss these rules and tariff, with a view to making them workable. It is the general experience that the rules as at present drawn do not encourage fire-resisting construction.

Mr. SEARLES-WOOD added: The tariff now in use, as I have said, takes the ideal fire-resisting building as the normal and treats the variants as increasing the premium. We think that it would be much simpler if we could show our clients a tariff arranged on the basis of a building in accordance with the Building Act and the variants as reducing the rate. As an example, if sprinklers are adopted a reduction of 15 per cent. of the premium will be allowed, and so on. Had I been in a position to do so, I would have moved that this Meeting request the Council to approach the Fire Offices Committee to ascertain whether they would meet a Committee of the Institute to discuss these rules and tariff, with a view to making rules and tariffs that would encourage fire-resisting construction.

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* JOURNAL R.I.B.A. 11th January 1902, p. 116.

DISCUSSION OF MR. PORTER'S PAPER.

Mr. John Slater, B.A.Lond., *Vice-President*, in the Chair.

Mr. THOMAS BLASHILL [*F.*] proposed a very hearty vote of thanks to Mr. Horace Porter for the very valuable Paper he had given them. Some of it consisted of a repetition of principles which had been dinned into the ears of architects and persons concerned with building for a very long time, but they could not be too often repeated. The Science Committee had very carefully considered what kind of report they should make on the matter of the Fire Offices Regulations, and he hoped that the Council would be encouraged by that meeting to act upon it. With regard to what Mr. Porter said about tests, in his (the speaker's) opinion tests were valueless, or next to valueless. A great number of such tests were made by the manufacturers of the article to be tested. One scarcely met with a single case in which the material to be burnt was not drenched with paraffin. That was absolutely fatal to a test. If one attempted to light a fire in a kitchen grate by first of all pouring paraffin on to the wood, the oil would blaze away very fiercely for a few minutes and then go out, but might not light the fire. As far as he had had the opportunity of advising the Fire Prevention Committee, he had recommended them to avoid this fallacious kind of testing, and to test the material as nearly as possible in the condition in which it was likely to exist. He should like to ask Mr. Porter if he could give them any more practical information upon such questions as concrete floors. He had been using them in London for fifty years or thereabouts. The composition of the floors they knew; but they wanted to know the behaviour of those fireproof floors in an actual fire. If Mr. Porter could get together some information as to what had really happened in a big fire where those concrete floors were seriously attacked, it would be extremely valuable. He could fully corroborate Mr. Porter's remarks about the danger of hollow partitions; they could not be too careful to avoid hollow partitions or shafts of any kind concealed in the construction of a house. They were sure to carry what was called a fire haze; that is to say, an exceedingly hot vapour which was produced by the fire below, and which would burst into flame as soon as it reached the fresh air. He hoped they were coming to a time when they should cease entirely the construction of buildings with wooden floors and floors that were not fire-resisting. He had been able to construct floors quite as economically of steel and coke-breeze as they could be constructed of good wooden material, and it did seem at this time somewhat behind the age to be erecting buildings of combustible materials in places where houses were close together. As far back as 1861 and 1866 he remembered seeing fire-resisting floors used as a matter of course in the buildings of Paris, when we had hardly begun to use them in England. He hoped that legal pressure would be brought to bear more strongly upon constructors in order to make buildings more nearly fire-resisting. Would Mr. Porter tell them the exact meaning of cinders? He assumed that the term was meant to cover coke-breeze, which was one of the safest of materials, especially when put together with cement in the proportion given. Burnt ballast was another good thing. Concrete made of flint ballast was the most easily disintegrated of all the usual classes of materials of which concrete was made.

Mr. GEORGE E. MEAD (of the Sun Fire Office), who was invited by the Chairman to speak, said that the subject which Mr. Porter had dealt with so admirably was of a more technical nature than he, being neither an architect nor a surveyor, was qualified to speak upon. He might say on behalf of the Offices, although he was not commissioned to speak for them, that they were always ready to be interested in and listen to suggestions coming from the Institute. In respect of the remarks which fell from Mr. Searles-Wood upon the report of his Committee, he was not able to pronounce anything officially, but any communication which was made he had no doubt would receive from the Fire Offices Committee proper attention. The proportion of causes of fire quoted by Mr. Porter was not such as he could altogether fall in with, that is, as to the number of incendiary fires. He thought all statistics which would attempt to fix upon any proportion were fallacious. Incendiary fires were very often so complete as to leave behind them no trace whatever as to their origin. Sometimes the perpetrator showed that he was altogether a novice at it. He would plant fires in different parts of the building, soak the material in paraffin, and then set light to the material. The result was a good deal of smoke, and then the fire went out. The police came in, detected the various heaps, and were able to pronounce very fairly upon the character of the fire. But there were a good many who knew better how to do it. Speaking from a good many years' experience in an important Fire Office, he had come to the conclusion—and it was greatly to the credit of this country—that the proportion of incendiary fires was small. They might judge of them, not only by the fires themselves, but by the way in which the claims were compiled after the fires. These they were able to scrutinise, and the result of their scrutiny was that they were fairly made, as a rule, and betrayed no evidence of fraud, which would be found if the origin of the fires was of an incendiary character. He should like to join in the expression of thanks to Mr. Porter for the great care which, from his treatment of the subject, he had so obviously bestowed upon his Paper.

Mr. BLASHILL said he should like to add a word on the question of incendiarism. It was very much impressed on his mind some forty-five years ago, when he was disturbed at three o'clock in the morning by a fire in an eight-roomed house. A man who had had two or three fires before got a bushel of fire-wheels and made half-a-dozen fires of them about his house, and opened the back windows. The whole of the fire-wheels had been laid up against doors and other eligible places; but when the police got into the house all the fires were going out; not one of them had set light to anything else. And that was the work of a man of experience!

Mr. LEWIS SOLOMON [*F.*] said he had much pleasure in joining in the vote of thanks to Mr. Porter. The recommendation of the Science Committee would serve a very valuable purpose. He had frequently had occasion to wait upon the Fire Offices with reference to claims, and, although they did not print matter for the use of architects, they had printed forms which they lent to architects; and the various surveyors were extremely kind in giving information, not only when they were applied to, but they took the trouble to examine architects' drawings and send them suggestions which could be acted upon for reducing the premiums. So it was not from any want of good feeling that the insurance offices did not always fall in line with architects. He thought, however, that a suggestion might be made to them to act with a little more business tact. After the Cripplegate fire, for instance, several of the owners of property wished to restore their buildings in a fireproof manner, with stone or teak stairs, and concrete floors, and everything of a most substantial kind. Naturally they applied to have the premium reduced to some extent, but they were told no reduction would be made. No doubt a good fire was a good advertisement for an insurance company; but supposing they saved 20 per cent. by having the building fireproof, if they only allowed a quarter of that amount to the person who built the premises, it would pay them in the long run. It was found in all other businesses that to give the purchaser a share of the profits led to improved business. As regards staircases, he thought that teak would be a very good material to use; but would the County Council allow it to be used in factories instead of what they recommended? He doubted it. He had tried at times, but they would not consent to it. His own impression was that a teak staircase would be far better than a stone one, both for fire-resistance and for safety as well. Mr. Porter had not mentioned anything about concrete stairs. Nine-tenths of the fireproof stairs in London were built of concrete, and his impression was that concrete was far better than stone, though not nearly as good as teak. The plan of a staircase and lift exhibited by Mr. Porter would not apply in London, because it did not comply with the requirements either of the County Council or of the fire insurance companies. The companies asked—and reasonably—for a space of 6 feet between two sets of doors, so that a fire should not spread. The plan exhibited did not show anything like as much. The County Council required newel walls to staircases, but the plan exhibited did not show a newel wall. Those matters required consideration. With regard to the fallaciousness of the ordinary tests, some years ago some material was brought to him as being fireproof, and the man laid out some of the material and lit a fire on top of it to show how perfect it was, and the fire did not burn through; but when some of the material was taken and thrown into the fire it burned like a piece of coal.

Mr. HENRY LOVEGROVE [*A.*], District Surveyor for South Islington, Shoreditch, and Norton Folgate, said he had a good deal to do with fires; there was a saying that when the Fire Brigade started, the horses' heads always turned towards Shoreditch. He had noticed that a good many fires occurred somewhere about quarter day in some of the smaller factories. He did not know whether they were incendiary fires, but he had no doubt many were caused by the alien workmen smoking cigarettes in the workshops and throwing them down anywhere, perhaps into a heap of shavings. With regard to sprinklers, he had seen a great many put up, at an enormous expense, with a hideous tower above the building, necessitating costly piers in order to carry the enormous cistern required. It appeared to him that if a fire broke out in the upper floors the lower floors would be deluged with water, and an immense quantity of stock destroyed. A friend of his, a large owner of mills, and a great believer in sprinklers, held that the theory of 10 feet apart was wrong; sprinklers, he said, should be 8 feet apart. This gentleman also thought that the alarm given at the time of the sprinkler starting would be a certain warning for the men to attend and turn off the water. He should like to know Mr. Porter's opinion on the water damaging the goods below. In the buildings with which he was most intimately connected—large furniture stores—immense damage might be done by water pouring down upon the goods. He should like to ask Mr. Porter about the question of rushes. He had seen a great many ceilings which had been constructed on rushes. He did not know when that practice started; it would be a matter of antiquarian interest to find out. Concrete staircases, he thought, were the very best kind. Stone staircases came to grief most disastrously, as he had known in one or two theatre fires, and an infirmary fire two or three years ago. He agreed with Mr. Blashill that coke-breeze concrete was a first-rate material. It stood very much better even than a good ballast concrete floor. The iron girders and stancheons should be protected in some way. There, again, Mr. Porter touched on a weak point. The other day, in a building constructed of everything to make it fire-resisting—with the girders cased and the columns cased—he found every floor filled in with partitions and fittings of ordinary deal, which would be most inflammable in the case of fire. He should like to ask Mr. Porter what he and other surveyors thought of those armour-plated doors called Dowson, or some such name. He had often been urged to allow them to be fixed, and had always refused. They had just fixed them in a place he was connected with, and he had had them taken down. He insisted on the doors being iron, according to the Act.

Mr. T. LEWIS BANKS [*F.*] said there was no doubt that concrete was being more and more used, not only in floors, but in all kinds of construction. When the Cardiff Merchants' Exchange was burnt down, he went to see the effects of the fire on an ordinary concrete floor, and found that the concrete went into holes in several places, and that allowed the flames to go from one story to another; consequently the whole building was consumed. Had the concrete been armoured those pieces of cracked concrete would not have fallen down; and it would have been very much safer. The same principle applied to concrete stairs. The Midland Hotel now being built in Manchester was, he supposed, the most scientifically fireproof structure of the hotel class that had ever been built in this country, and the principal staircases there were concrete staircases in the first instance: they were all armoured in the way he had mentioned, and were afterwards covered with marble. He mentioned this as a fact which had not been referred to by the lecturer and others who had spoken. There was a material, not much used, which he thought was the best fire-resisting plaster: it was made of slag from the hematite furnaces. The objection to this hematite slag was that it set very slowly; but if carefully selected and ground as fine as flour, it would be found to set much harder than any Portland cement, though much more slowly.

Mr. MAX CLARKE [*A.*] said he wished to add his thanks to Mr. Porter for the very admirable Paper. Anyone who had read a Paper at any time knew the trouble it entailed. He hoped Mr. Porter would not mind if he made some criticisms on the Paper. In the first place Mr. Porter seemed to fall foul of the word "fire-prevention." He had given them an analysis of the various accidents by which fires occurred. It might be taken that all fires were the result of accident, except those few which were the work of incendiaries; and the term "fire-prevention" was intended to convey that the fire should not assume importance. That should be the generally accepted meaning of the term. That being so, he thought Mr. Porter should have gone into the question of how fires should be prevented attaining the undesirable importance they so frequently did. Mr. Porter had given a very clear description of defective hearths and flues; but what they wanted was some method of obviating the defects. In the North, and in Ireland, nine-tenths of the chimney flues were built with terra-cotta or fire-brick linings, which he thought were almost unused in London. If they were more generally used, a great number of the fires which occurred through defective flues might be obviated. He threw that out as a suggestion. Then the Building Act (which Mr. Porter had not mentioned, although it had an important bearing on these matters) permitted one to drive plugs and iron holdfasts into chimney breasts, entirely ignoring the fact that the iron holdfasts might get red-hot and set fire to skirtings, &c. It was news to him that gas created only explosions. "Only explosions" he took to be a good means of creating fire. Whether it was a purely fire insurance matter he did not quite understand. But supposing a fire to be caused by an explosion, would the insurance company look upon it as an accident, or would they look upon it as an explosion only and not coming within their risk? A paragraph of Mr. Porter's Paper read as follows: "Fire-resistance is of course a relative term, and the degree of perfection to which it can be carried depends, not only on the building itself, but also on its contents and immediate surroundings. This has to be kept in mind in considering the question, as it is useless to expect owners to spend large sums on 'fireproof construction' which they are perfectly aware will benefit their neighbours rather than themselves." He considered that a most unfortunate remark to be made in the room of the Royal Institute of British Architects. In the first place, he did not consider it to be the fact, and in the next place it would be apt to create an unfortunate feeling amongst people who were going to build. If a man built for the good of his neighbour, when his neighbour came along he built for the good of the adjoining man. If they only looked at it in that light, it would be quite sufficient to make it for the benefit of the building owner. But, on the other hand, a man who built a fire-resisting structure did benefit himself. Of course they must start with the assumption that there was no such thing as a fire-resisting building—at least no such thing as a fireproof building. They had only to get the material inside, and it made no difference what the building was made of; if the material caught alight it was destroyed. He had with him a short report of the Horne Building fire in which it was stated—and it was a positive fact—that it made no difference how much their steel or other material was covered with non-conducting mediums; in time all the non-conducting mediums were precisely the same temperature as the fire itself, and they communicated it through their thickness to the steel structure. So that, as Mr. Porter said, a building could not be called fireproof except to a certain degree, and that degree depended entirely upon the materials inside. With regard to brickwork, the best fire-resisting brick was of course a fire-brick; but a fire-brick would not stand a great amount of weight, so they had to use the happy medium—a material which would be weight-carrying, and at the same time would not be affected by the fire. In the Barbican fire enormous cracks were caused in the thickness of the brick walls by the excessive heat. Hard terra cotta, again, when it was heated, and water put upon it, was absolutely useless. With regard to concrete Mr. Porter said: "Tests have been made with concrete in which the material has been subjected to as much as 1976 degrees F. for several hours, and has been allowed both to cool slowly and also suddenly by application of water." He should like to know where those tests were made. He had written reports upon several tests which were made lately, and he would like to compare the results of these. With regard to ballast he differed from Mr. Blashill, because ballast was *not* a good material. At the Theatre Royal, Glasgow, where a fire occurred a good many years ago, the corridors were all made of concrete, the aggregate of which was ballast. It became very hot, and when the water was put on the majority of the floors fell down. When they made floors of ballast at the British Fire Prevention Committee's station, and put water on them, they fell down, usually in layers, as regards their thickness; but the coke-breeze concrete, although absolutely incandescent through its thickness, did not fall down. It seemed pretty certain from their experiments that a coke-breeze concrete floor, if not of too large an area and with sufficient thickness to protect the ironwork, was fairly good fire-resisting construction. He had noticed that cast iron would carry its load perfectly well in fire so long as the water was not applied; but when the water was applied cast iron was a very dangerous material. He understood that the best treated wood added 90 per cent. to the every-day cost. He was supplied with a quotation some time ago at 6*s*. a foot cube. That was for deal, and the price quoted would put it on a par with the best hard wood. He had a report, not yet published, on a test of oak and deal floors. As it applied to a certain extent he would refer to it. The posts were solid deal posts and beams overhead. The following was from the report: "The centre post measured 13 inches by 13 inches at the bottom and 13½ inches by 13½ inches at the top, over the charred surface, and was charred to an average depth of 1¼ inch. The transverse beams measured 9 inches wide over the charred surface, and were charred to a depth of 2 inches." At the Theatre Royal, Glasgow, during the fire the timber beam over the proscenium wall was burnt completely through. It rested upon the wall 3 feet at each end, and the whole of the thickness of the timber was burnt right through the ends, so that the light could be seen through it; there was a space of 7 or 8 inches at each end. That, of course, occurred from the brickwork round it having got red-hot, and the timber burning away by degrees through the red-hot brickwork. Heavy timber construction was almost insisted upon now in Hamburg. The Hamburg warehouse construction was entirely of oak, and the only danger was where it was put together with these massive bolts, which was a point to be considered. Timber construction was extremely dangerous as regards smoke. The enormous quantity of perfectly black smoke which was emitted, by oak at any rate, in burning was a great source of danger. At the fire in Brownlow Street, some time ago, the place was not burnt down, but the oak timbers in the basement were burnt, and the three inhabitants were suffocated by the smoke. In the case of the test by the Fire Prevention Committee—the second floor—there was sufficient smoke to asphyxiate the people all round. No discussion on fire prevention was complete without considering the lives of the people; and if one did that at all one must consider, not only their being burnt, but their being killed in any other way. Referring again to the Horne Building fire, the original fire did not occur in the Horne building; it occurred in Jenkins's stores adjoining, and after that the fire was communicated to the Horne building through the top of Jenkins's building. He would read an extract from the report: "According to the best available information the night watchman for T. C. Jenkins's grocery store first became aware of fire while making his rounds at 11.45 p.m., but it was some little time before he finally located it in a barrel of paper, rags, scraps from the employés' dinner baskets, and similar refuse, which stood at the bottom of the elevator shaft. For some time—about fifteen minutes, as estimated by the watchman—he fought the fire with a chemical extinguisher. Finding his efforts to be to little purpose, and the flames rapidly ascending the elevator shaft, the watchman sent in a call for the fire department." The report went on to say that the fire people were there for some time, and the fire got to the top of the lift shaft, being fed by the stores of oil, &c. "The firemen had for some time previously abandoned the hope of saving Jenkins's building, and had turned their streams upon the large dry goods store of Joseph Horne & Co., and the neighbouring office building also belonging to Joseph Horne & Co. Despite their efforts, however, the woodwork of both these buildings near the tops began to burn at about one o'clock." The fire went right up the elevator shaft and set fire to the Horne building at the top. Of course that would be obviated in most of the buildings of the warehouse class if the lift shaft were surrounded with brickwork, and if the openings were fitted with fire-resisting doors. He was not a believer in Dowson's, or anybody else's, armoured doors—he thought they were a mistake —nor was he a believer in an iron door which was not adequately fastened. The Building Act said there must be an iron door here and there, but said nothing about the fastening. He was very pleased to see Mr. Porter's design for the staircase and the lift shaft, and he hoped he would be able to appropriate the idea very shortly! With regard to teak staircases, if they had a solid teak step, or a solid oak step, with a fairly good thickness in the waist, it would be, he thought, a perfectly fireproof material. But if they built a wall round the staircase which complied with the County Council factory requirements at the present time they would have something very nearly approaching what one might call fireproof as distinct from fire-resisting stairs. There should be absolutely nothing on the staircase of a combustible nature, then there would be nothing to destroy the staircase. With regard to the six-foot space which the insurance companies would like them to put between fire-proof doors, he thought that was asking a little more than they would get. He should like to say a word for a favourite material of his—slag wool. Slag wool was the best non-conducting and most fire-resisting substance obtainable. He had patented a fire-proof curtain for theatres made of this material, and he was confirmed in his theories by an experiment made by the Fire Prevention Committee with a partition made of slag wool. Some wooden uprights were packed with slag wool and subjected to fire for two hours, and except for the burning off the boarding from the outside, it did not make the slightest difference; it was just as good, so far as the partition was concerned, at the end of the experiment as at the beginning. He therefore advocated slag wool as against asbestos for covering columns, because in the first place it was a better non-conductor of heat, and in the next it was very much more economical.

THE CHAIRMAN (Mr. John Slater, *Vice-President*) said there was no doubt that fire prevention and fire resistance were two totally different things. As Mr. Max Clarke said, one could not prevent a fire occurring, whatever one did, because the causes of fire were beyond the control of the people who constructed the building. What architects and builders had to do was to make the buildings as far as they could to resist the fire which was almost certain to break out in many kinds of buildings sooner or later. He was much struck by the statistics Mr. Porter gave from the Glasgow fire returns showing the benefit derivable from really good construction in the way of hearths and flues. He did not think Mr. Porter laid quite enough stress upon a matter which had been hinted at by Mr. Max Clarke—namely, the extreme importance of making the roofs fireproof. If the roof of a building were made of concrete and asphalte, he believed the spread of fire would be resisted to a remarkable extent. He agreed with Mr. Max Clarke that unless cast iron was protected, as soon as water was turned on to it it was practically useless. With regard to the staircase, the plan of which was shown by Mr. Porter, it seemed to him that Mr. Solomon in his criticism of it rather mistook the purpose for which it was intended. As he (the speaker) understood it, a staircase of that sort was intended to make the upcast shaft through which the fire was certain to go practically cut off from the rest of the building, and for that purpose it seemed admirably designed. The only fault he found with it was that there were winders at the bottom, and there was a flight eighteen steps long. Of course that did not accord with the regulations of the London County Council with regard to any fireproof staircase. It always seemed to him an exceedingly curious thing that the London County Council should lay down in very many particulars such exceedingly stringent regulations, which had to be complied with literally in every respect, and yet that a man might build a warehouse five or six stories high with simple wooden joists, and no ceiling at all, if he liked. That seemed to be a matter which there ought to be some regulations to prevent, because one might have one's fire-resisting staircase perfectly good, but, considering the materials stored in a great many factories and workshops, the fire would break out, and would rise from floor to floor in an incredibly short space of time if there were no ceilings, as there were intended to be, but simply the floor-boards between the joists to prevent the fire passing from floor to floor. He could not help thinking that if instead of having these, in many respects, vexatious restrictions as to technicalities, the County Council were simply to pass a resolution that every building of the factory and workshop kind must be so constructed as to satisfy them that it was fairly fireproof, it would do a great deal of good. In conclusion he would only say that although Mr. Searles-Wood was technically unable to bring forward the resolution of recommendation to the Council, he was quite certain that after the expression of opinion at this meeting the Council would be only too pleased to adopt the recommendation the Science Committee had sent up, and would endeavour to induce the Fire Offices to meet them and see if they could not bring about some consistent tariff.

Mr. HORACE PORTER, in responding, said it had been a great pleasure to read the Paper, but he quite felt that there were many shortcomings in it. Such a Paper as this, on such a difficult subject, he had found most difficult to write. With regard to what Mr. Clarke said as to the tests and the 1900 odd degrees, these were conducted by a Commission of the City of Hamburg in 1895, a full report of which would be found in "Materials of Construction," by J. B. Johnson. With regard to concrete stairs and concrete floors, referred to by Mr. Blashill, he was afraid he could not personally give any account of a floor that was damaged simply through the concrete. Mostly the fireproof floor was damaged by the exposure of the ironwork in it, and it went from that cause, and not through the concrete.

9, Conduit Street, London, W., *4th April* 1903.

CHRONICLE.

Legal Registration of Architects.

The following letter and memorandum have been addressed from the Institute to the Presidents of the Allied Societies:—

28th March 1903.

Dear Sir,—A circular headed "A Government Diploma for Architects" having recently been forwarded to all members of the Profession, we are instructed by the Council to forward for your information the subjoined Memorandum which has been carefully considered and approved by them.

In the event of any further steps being taken towards legislation in the matter the Council will be prepared on learning the particulars to forward an amplification of their views.

And in the meantime, after you have ascertained the general opinion of your Society, the President hopes that you will be able to meet him in conference with the other Presidents of Allied Societies on matters vitally affecting the interests of Architecture throughout the country.

We are, dear Sir, yours truly,
Alexander Graham, *Hon. Secretary.*
W. J. Locke, *Secretary.*

Memorandum.

The Council of the Royal Institute of British Architects have had under their consideration a circular headed "A Government Diploma for Architects."

The circular gives but little indication as to what is proposed, but states that "it may not be possible, nor is it essential, at the present juncture to be unanimous on the *details* of any scheme of registration, but until it can be shown that uniformity exists on a *principle* so vitally affecting the public interest and Architectural practice it will be practically impossible to induce Parliament to grant facilities for the discussion of a private measure."

It is very difficult to say exactly what these words mean, but they, no doubt, refer to some form of legal registration, and the Council feel that it is impossible fully to explain their views on such a question as this without more knowledge of the details.

If this diploma is to prevent anyone who does not hold it from designing buildings, would not such a scheme meet with irresistible opposition, not only from many Architects, but also from the Institutions of Civil Engineers and Surveyors? And what chance would there be, even if it was thought desirable, of passing any such measure if it meant that Engineers must design no more bridges or railway stations, and Surveyors no more buildings on the estates which they manage?

If, on the other hand, the idea is to prevent anyone who does not hold such a diploma from calling himself an Architect, would not Engineers, Surveyors, Borough Officials, Auctioneers, and Estate Agents be left as free as at present to carry on architectural work? This quite apart from the still more important question whether it is possible by any legal registration to decide which man shall call himself an Architect and which shall not.

Again, is it not certain that there is a large body of influential Architects, both within and without the Institute, whose opinions we value, who doubt the possibility of deciding by legal registration who shall and who shall not be called an Architect, and who further doubt the advantage it would be to the art of Architecture? These again would oppose successfully any such scheme.

Architecture claims to be one of the liberal arts, akin to the art of the Painter, the Sculptor, and the Musician; and if they do not seek protection from the charlatans in their respective arts, why should we?

The Institution of Civil Engineers has lately started an examination, but relies on the influence of its own Institution to give it value without going to the Government for aid. Cannot we do the same?

If legislation is required to protect the public from bad construction, it should surely be directed against the speculative Builder rather than the Architect, and take the form of some building examination for all engaged in superintending such operations; but if the idea be to protect the public against bad art, can any legal registration do this?

Ought we not rather to devote our energies to making the Royal Institute of British Architects more truly representative by so encouraging the higher education of our young men that their superior attainments may raise the standard of our art and increase the confidence of the public in us?

Could we not then trust in ourselves and keep the training of Architects and the regulation of Architectural matters in the hands of Architects themselves, who surely know best what is required, without tying our hands with Parliamentary interference?

Caerphilly Congregational Church Competition.

The Cardiff, South Wales, and Monmouthshire Society have been striving to secure fair conditions in this competition. The most unsatisfactory clause is No. 7, under which the successful competitor is to be paid a commission of 5 per cent. for all the "usual professional services of an architect," including the taking out of quantities. The total amount of money available is £2,300, which is to include the architect's fee. Two other clauses, 8 and 9, dealing with the adjudication, needed comment. At the request of the Cardiff Society, a letter was written from the Institute to the promoters. The latter gave a satisfactory reply with regard to clauses 8 and 9, but refused to alter clause 7, saying they could not afford to do so, and further that they find it is an ordinary condition and similar to what has been put in and agreed to in a number of other cases. The promoters have now issued to intending competitors what purports to be a copy of correspondence between the Cardiff Society and themselves, *but leaving out all reference to clause* 7. The Cardiff Society very properly characterise this document as misleading, and have requested their members not to enter for the competition. It is to be hoped that no member of the Institute will be a competitor.

Architects' Responsibilities.

Under the heading "Architects' Responsibilities" in another column is reported an action tried in the Lord Mayor's Court in which a firm of wood-flooring manufacturers were plaintiffs and Messrs. Herbert H. Law and Sidney T. Harris [*A.*], architects, of Northampton, defendants. The question apparently was one that had never been before the Courts previously. As will be seen, the actual issue between the parties was but a trifling matter; the principle involved, however, is of the utmost importance to architects and their clients, and one that must be steadfastly maintained, not only in their interests, but in the interests of commercial morality. The architects, in a letter to the Institute setting out the facts of the case, state that their chief reason for taking the trouble and going to the expense of defending such an action was to uphold the power and authority vested in members of the profession, and they ask that publicity be given to what they believe to be an unprecedented case. Messrs. Law and Harris and the profession generally are to be congratulated on the successful defence made in the case.

The Abuse of the Term "Renaissance."

Baron Henry von Geymüller [*Hon. Corr. M.*] sends a copy of his communication on the above subject to the French Association for the Advancement of Science at the Archæological Congress of 1900. It is entitled *De l'Abus du mot de Renaissance comme dénomination de Périodes de l'Art ou de Styles*, and has been reprinted from the original report and issued in leaflet form. The following is the text:—

> L'auteur désire appeler l'attention sur le danger qu'il y a à qualifier de "Renaissances" des styles qui ne renferment pas les éléments indispensables à la Renaissance:
>
> UN ÉLÉMENT ANTIQUE ET
> UN ÉLÉMENT DE L'ART GOTHIQUE.
>
> L'abus de ce nom éminemment juste pour désigner un fait unique dans l'histoire du monde, fausse l'intelligence des phénomènes et rend plus difficile leur étude scientifique et historique. Les périodes et styles qu'il ne faut pas considérer comme des Renaissances sont:
>
> *En Italie:* les différentes tentatives des écoles romanes (pisane et toscane, aux XI^e et XII^e siècles, et celles des Cosmates, plus au midi et à Rome).
>
> *En France:* 1^o la merveilleuse éclosion de l'art gothique, aux XII^e et XIII^e siècles; 2^o l'école franco-flamande et le naturalisme réaliste de la Flandre, du nord de la France et de la Bourgogne, au XV^e siècle.
>
> Les tentatives italiennes ci-dessus sont des essais de *relèvement* latin, de *renouveau* latin, de *reprise* de formes latines. Il leur manque l'élément qui, seul, aurait pu les rendre viables et produire une véritable Renaissance.
>
> L'éclosion de l'art gothique est, d'une part, beaucoup plus qu'une Re-Naissance, d'autre part, c'est quelque chose de plus limité et restreint. Ce style et son esthétique ont eu la gloire d'introduire dans le monde quelque chose d'absolument nouveau et sans précédent. Ce n'est donc pas une Re-Naissance, mais la "Naissance" première et

glorieuse de l'Art basé sur l'étude de la nature du Nord, de l'Art français proprement dit, ou du premier art véritablement français, en même temps l'Art national de tous les peuples gallo-germains.

L'Art franco-flamand, loin d'être l'origine d'un nouveau style, celui de la Renaissance, est l'expression dernière d'un style qui finit. C'est la forme la plus libre, la plus complète, la plus intense de la psychologie, du goût et de l'esthétique gothiques.

Ce qui manquait aux écoles toscanes et romanes était le contraire de ce qui manquait aux écoles franco-flamandes. Aux premières il fallait un ferment gothique qui n'était pas encore né ; aux secondes, un ferment italo-antique. Sans le mariage de ces deux esthétiques, jamais il n'y aurait eu de Renaissance.

La Renaissance commence en grand en Toscane, avec le Dôme de Florence, d'Arnolfo di Cambio, une conception "d'esprit et de proportions *antiques*" dans une robe semi-gothique, comme Saint-Eustache, à Paris, au XVI^{e} siècle, est un édifice gothique dans une robe de Renaissance milanaise et François I^{er}.

THE TEMPLE.

We disburse large sums for dignity in England, and the commodity is generally well worth the price. It is, perhaps, not wholly of free choice that the British public pays dearly for its law, nor are the general citizens of London invited to express their opinion on the economic aspects of a system which houses a costly, but indispensable, profession in incommodious groups of elderly dwellings, ranged, with all the profusion of antiquity, over sites of incalculable value. It may, indeed, be well that the public conscience is not put to the test of so troublous a decision. It is easier and nobler for us to assume as a virtue what is practically a necessity, and to consider, with all the glow of self sacrifice, that the contributions which the law levies at times from even the least criminal of its clients are free-will offerings not merely to the personal welfare of our family solicitor (and his chosen counsel), but also to that department of our city's dignity which in distinction to mere modern amenities we may brand historic and patrician, if not antique.

The enormous wealth which lies buried in the retention of old, inadequate, and wastefully-planned buildings upon the freehold sites of the Inns of Court is, in a very real sense, contributed by the legal fees of those who employ the machinery of the law, and many of us—most of us, I hope—are proud to think that it is so. Probably the present age has more pleasure than had preceding generations in the rambling Georgian tenements which house with such disregard of ground values the gentlemen whose "opinion" is worth so much more than our own.

Indeed, if we were told, some fine morning, that the Benchers of the Temple and of Lincoln's Inn [*] had come to the conclusion that by judicious rebuilding they could accommodate their present legal tenantry upon one-third of their present sites, and further that the income which they expected to derive from the disposal of the remaining acres was estimated at so high a figure that for the future legal advice would be tendered and legal services rendered free of charge, I truly believe that many of us (perhaps the less litigious of us) would regret the innovation. Free law would be a poor compensation for the abolition of that quaint oasis which makes in so great a degree for the beauty and peace of Central London.

Mr. Bellot, whose book [†] is here under notice, writes of the Temple from within. It is to him not a place of refuge from other more visibly active spots, but the very centre of work and history. It is in fact "Our House," and naturally he feels to the full that unreasoning but most reasonable conservative affection for the sticks and stones of which the place is made which even we outsiders are glad to acknowledge. Like us, though no architect, he reverences the old, even where its antiquity may be only that of the eighteenth century. Indeed we find him so warm in condemnation of certain modernisms that in a rhetorical attack on the new buildings by the Embankment his prose fairly collapses. It is, to be sure, not wholly as a modernism that Mr. Bellot condemns this building, but rather (as I gather) for the reason that it does not resemble one or other of six French buildings which he enumerates ; a criticism which tempts one to ask, by the way, why it should be expected to resemble a French building at all.

Architecturally, Mr. Bellot's book is something of a disappointment. The fact that he heads two of his chapters "Buildings in the Inner Temple" and "Buildings in the Middle Temple" respectively, raises the hope that the buildings themselves are to be described ; but the author's interests in this, that, or the other block are mostly human, and he hurries from door to door discoursing not so much of bricks and mortar as of bygone worthies —and unworthies.

Words cost more in the Temple than they do in Conduit Street ; it is not therefore wholly becoming for architects to criticise the prose of barristers. Let us accordingly attribute to emotion the broken-backed sentence already alluded to (pp. 294–5), and let us charitably consider that similar lapses in other parts of the book are due to defective proof correction. It will still be no impertinence to ask what Mr. Loftie has done that he should be chastised with a personal pun on p. 210.

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[*] Lincoln's Inn, to be sure, has already modernised a large part of its buildings.

[†] *The Inner and Middle Temple.* By Hugh H. L. Bellot, M.A., B.C.L., of the Inner Temple. London: Methuen & Co., 1902.

This is enough of adverse criticism. Mr. Bellot's book is meant to be a medley of history, chat, and pictures, and if it be occasionally iterative, and occasionally disjointed, such qualities do not interfere with its intention. The illustrations are various in style. Many are reproductions from old water-colours and prints; others are original, and owe their creation to Miss Wylie, whose handiwork is far from commonplace.

In some ways the most interesting of Mr. Bellot's chapters is the first, which deals with the early history of the Temple, and, indeed, gives the steps by which the present Benchers became the successors of that company of Red Cross Knights who in the first years of the twelfth century owed their existence to the vow of Hugh de Paganis. Such a line of inheritance—or, more properly, of progressive ownership—is full for us modern folk of the mysterious interest which attaches to all such proofs of our own union with antiquity; and the spot most sacred to meditation on this theme, the visible and central habitation of the thought which makes the long continuance of the name "Temple" a reality and not merely an idea, is "the Round"—that circular atrium or narthex of the Crusaders' church, whose very form is a symbol. I would not imply that the Round attests the length of the Temple's antiquity. Far from it. There was a Round before the Round; for the building we admire on the south of Fleet Street is a twelfth-century successor to an earlier church, whose foundations probably lie at the north end of Chancery Lane, somewhere near the Birkbeck Bank. Yet if the church that we know cannot carry its associations back to the very days when St. Bernard gave his blessing to the Order which was in course of time to wander so far from St. Bernard's ideals, the building will at least take our thoughts through seven centuries to the occasion when, in the presence of Henry II. and his court, the ceremony of its dedication was performed by Heraclius, Patriarch of Jerusalem. Even at that date the aristocratic exclusiveness of the Knighthood and its widespread hold upon European society must have brought the rank and wealth of the association into greater prominence than its original functions of assisting pilgrims on their road to the Holy City. Soon we find them established in a new *rôle* as bankers, bailees, and custodians of the wealth of others—a capacity which naturally brought upon them the importunity of kings, to which, at the beginning of the fourteenth century, was added as a culminating oppression the hostility of the Pope. Meanwhile wealth had borne fruit, and had produced among the Templars themselves other qualities than the chastity and obedience to which they were pledged. Whatever be the truth of the charges levelled against them (and there were some who admitted under torture *oscula inhonesta* and *spuitio super crucem*—the latter, strange to say, a part of the ceremony of initiation), there can be no doubt that by this time the Order was a secret society of great wealth, of great extent, and perhaps of great heresy. Accordingly, Rome, urged on by Philip le Bel, crushed it, and in 1312 its goods passed—nominally, at least—to the Knights Hospitallers or Johnnites. That they did not actually so pass in England, spite of a papal decree, was the cause of many disputes; and the settlement of one of these by the return of some wrongly appropriated land was the original cause of the still existing division of the Temple into two properties.

It will surprise no one to discover that the period of disputed ownership was followed by an inrush of lawyers; but, to do the lawyers justice, it should be stated that they came in not as owners but as tenants. They are first heard of as occupants as early as 1320, and, though only lessees of the property, they seem to have had a very creditable idea of how to manage their landlord to their own advantage.

The Reformation was, of course, a death-blow to the Knights Hospitallers, but their tenants were not to be so easily disturbed. From 1540 to the seventeenth century the lawyers held direct from the Crown, and when in 1608 there was a wish on the part of James I. to exercise his rights as a landlord by selling the freehold, they bought him off with a mug!—a "stately cup of pure gold" filled with coin. James thereupon renewed the charter, cherished the cup, and presumably spent the money. His successor pawned the cup, and Charles II., having nothing to fall back upon, sold the reversion of the property this time to the lawyers themselves.

So the Red Cross Knights are gone, and the Johnnites are gone, and the Stuart kings are dead, and the golden mug was melted by the Jews of Amsterdam, but the lawyers live on. And, so long as they resist the temptation to make business for architects by building New York sky-scrapers on their once sacred land, good luck to them!

PAUL WATERHOUSE.

CLIFFORD'S INN.

THE quietude and repose of Clifford's Inn, aside from the whirl of busy Fleet Street and Chancery Lane, has at last been disturbed by the notice boards and flaming posters affixed to the Hall, announcing a sale early in May. Another of the links of the past is threatened; let us hope that it will not be let out in building lots and the pleasant garden covered with bricks and mortar.

Clifford's Inn, the oldest Chancery Inn, was originally the town house of the Lords Clifford, ancestors of the Earls of Cumberland. The messuage was granted to Robert-de-Clifford by King Edward II. in the third year of his reign, 1310. In 1345 the widow of Robert-de-Clifford demised it to students in the Common Law for the rent of £10 annually, and afterwards, by a grant to Nicholas Sulyard, Esq., principal, and other seniors, disposed of the premises in consideration of £600 and £4 per annum.* Stow in his *Survey* succinctly points out the course of reading enforced at the end of the sixteenth century. He says that the Inns of Court were replenished partly by students coming from the Inns of Chancery. From this Inn students proceeded to the Inner Temple.

The present hall, probably built on the site of a former one, is Perpendicular in style; the cusped heads of the three-light windows show a somewhat debased form. The glass is now plain, in small squares, but formerly armorial bearings were to be seen in the glazing. A flat ceiling over, of a late date, may possibly hide an interesting timber roof above.

The walls are panelled up to the sill line and plastered above. The buttery exists on the other side of the passage, with its wide range and stone floor, and lead-light windows. A panel exists over the passage with the initials and date:

P.

W. M.

1767.

It was here that the Commission presided over by Sir Matthew Hale, Sir Orlando Bridgeman, and other Judges, sat, after the Great Fire in 1666, to hear and settle claims of landlord and tenant, boundaries, &c., of the burned houses. Of Sir Orlando Bridgeman, Chief Justice of the Common Pleas, who replaced Clarendon, Pepys in his *Diary*, 31st August 1667, writes as follows: "In the evening Mr. Ball of the Excise office tells me that the seal is delivered to Sir Orlando Bridgeman; the man of the whole nation that is the best spoken of and will please most people, and therefore I am mighty glad of it."

Sir Edward Coke and John Selden were once residents, as also was Harrison, the regicide, a clerk in the office of Thomas Houlker, an attorney of this Inn.

The writer was informed that there was not a suite of chambers vacant, and pending the arrival of the particulars of sale from the auctioneers no decision could be arrived at as to the scare aroused in the minds of those who love their "old London."

W. Arthur Webb.

THE CASTLE OF VINCIGLIATA.

Mr. John Temple Leader, whose death occurred at Florence, on the 2nd of March last, at the patriarchal age of ninety-three, was, since the death of the late Earl Fitzwilliam, the only survivor of a pre-Victorian Parliament. He was—like Mr. Gladstone and the late Mr. C. P. Villiers—at one time the Father of the House of Commons, having been a member of the first Reformed Parliament, and was returned for Bridgewater in 1835, in the reign of William IV. Mr. Leader resigned his seat in 1837, in order to contest the re-election of Sir Francis Burdett for Westminster, but was unsuccessful; he was, however, elected in July of the same year, when he defeated Sir George Beaumont. Mr. Leader was an intimate friend of Lord Brougham, and, about 1845, he accompanied Brougham to Cannes and settled there, where there is now a Square Brougham and a Boulevard Leader, as well as a statue of Brougham in the Grande Place, and a monument to him in the cemetery where he was buried, he having died there in 1868.

In 1855 Mr. Leader left Cannes and purchased the ruins of the Castle of Vincigliata, a feudal fortress in the territory of Maiano, the birthplace of Benedetto da Maiano, the architect of the Strozzi Palace, Florence, not far from Cave di Fiesole, about two miles N.W. of Fiesole, and about three miles S.W. of Florence, which he proceeded to rebuild entirely, and to fill with bric-à-brac of every description.

This ancient castle was erected in feudal times, and together with the castle of Poggio attested the supremacy of the Florentine family of the Usimbardi, both of which belonged to them. At the commencement of the fourteenth century the castle became the property of the family of Buonaccorsi; and Vincigliata in particular, after having become the property of the Visdomini and the Buonaccorsi, passed, in 1335, to a certain Paolo, the judge, son of Decco di Ceffino da Figline, and finally to the family of the Albizzi, who had intermarried with the Alessandri, and these latter inhabited the castle from the middle of the fourteenth century up to a comparatively recent date. Having been neglected by the owners, the castle gradually fell into decay, until, at the beginning of the last century, it was nothing more than a ruin covered with ivy and brambles. A ruined loggia, upon which was a portion of a terrace, a courtyard enclosed on two sides by crumbling walls, a portion of a staircase, a deep well, a gateway, with a niche over, and a few fragments of masonry scattered here and there, were all the remains of the castle which had escaped the ravages of time when Mr. Leader purchased the property in 1855 from a certain Lorenzo Galli of Rovezzano, who had acquired it of the Alessandri family in 1827.

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* In the reigns of Henry IV. and V. it was an independent school for the study of the law, not connected with or subject to the Temple.

The work of rebuilding the castle was entrusted to the architect Giuseppe Fancelli, who died during the progress of the works, and whose labours are gratefully acknowledged in an inscription under a bust of that artist placed within the courtyard of the castle.

Signor Fancelli was the son of Mr. Leader's factor or farm agent, and was bred to a country life; but some of his ancestors had been architects or sculptors, one of the statues in the Boboli Gardens, a figure of Vulcan, being by one of them. As soon as young Fancelli was free to choose he abandoned country life and entered the art-school of the Belle Arti at Florence in December 1842. On leaving the Belle Arti in 1849 he was apprenticed to the architect Cav. Mariano Falcini, and won prizes in competitions at Siena in 1851, and at Florence in 1852; he also assisted Cav. G. Baccani, and built the chapel to Mr. Leader's villa at Maiano. He died of miliary fever in 1867 at the early age of thirty-eight.

"When Giuseppe Fancelli commenced this great design," says Lord Lamington,* "it was after a conscientious study of old Italian castles and a great knowledge of the annals of Italian history. He had wandered over many a battlefield and visited many a crumbling ancient hall, and was intensely interested in his work. He was so fortunate as to find drawings of the castle as it had been restored by the Usimbardi; from these he was enabled to discover the line of the ancient walls, and remove all the earth and rubble—the accumulation of centuries. For not only were all the outworks, and the foundations and the exterior defences, mostly buried under earth and rubbish, but even the remains of the towers, the halls, and ruined stairs were hid, or, where exposed to view, were worn away by decay. Trees had taken root in courts once the scene of princely festivities. The whole place when Mr. Leader commenced his operations was very picturesque—a favourite resort for the poet and artist—but very hopeless, if regarded with the view of reconstruction. Mr. Leader had, to aid him, not only the intrinsic merit and skill of the young architect, but the deep interest in all natural works of art, in the love of the beautiful, which is a possession of the Italian people, and which Fancelli possessed in a pre-eminent degree."

An Italian writer quoted by Lord Lamington is not so enthusiastic with regard to Vincigliata as a residence as some English admirers have been when he asserts:

"Come abitazione Vincigliata non sarebbe certamente gradita, dappoichè gli ambienti principali sono troppo oscuri, anzi melanconici, il vano destinato al passaggio troppo ristretto."

[As a dwelling Vincigliata could certainly never be agreeable, inasmuch as the prevailing atmosphere is too dark, as well as melancholy, and the space devoted to the corridors too narrow.]

It is much to be regretted that the owner of the Castle of Vincigliata should have devoted so much time and money to what is after all a sham and a forgery. He might have constructed a villa on the site; but to build a reproduction of a fourteenth century fortress, and to adapt it to the requirements of modern life, was to attempt an impossibility. Reference has been made to Alnwick Castle in Cumberland; but in that case a compromise was effected, and while the exterior has all the appearance of a border stronghold, the interior is fitted up in the Italian style without any attempt to reproduce mediæval features.

John Hebb.

THE BLOIS STAIRCASE.

I HAVE just read in the Journal of the Royal Institute of British Architects last received (Vol. X. 3rd series, p. 217) an article by Mr. J. D. Crace on Th. A. Cook's book, *Spirals in Nature and Art*, with the heading, "Leonardo and the Blois Staircase." Mr. Crace quotes different circumstances from which Mr. Cook is inclined to think that Leonardo da Vinci might be the designer of the celebrated open staircase of the Château de Blois.

Having, as far as I know, had the opportunity of publishing the least incomplete study on Leonardo da Vinci as architect that has hitherto been given,* and having also published two volumes on the *Architecture of the Renaissance in France*,† I may perhaps be allowed to state what I think of this idea of Mr. Cook, and allude to what I have published on the same subject.

(1) The so-called "aile de François I.," to which belongs the staircase, was built in its principal parts from 1515 to 1519. Leonardo da Vinci entered the service of François I. in Italy, 1515, but came to France with the King only in the beginning of 1516.

I would not like to say that these dates alone suffice to show that the supposition of Mr. Cook must absolutely be erroneous, but I do not believe it will ever be confirmed. I easily understand that one can arrive at such ideas. I have published the sketch of a plan for a castle on the road to Amboise,‡ by Leonardo, and also the studies for some tempietto at the angle of a terrace,* which, if I am not mistaken, has been supposed to have been intended for some place at the Castle of Amboise; and though there is no proof in favour of such a destination, it is quite possible, from its style, that it was made in connection with something of that sort.

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* Formerly Mr. Cochrane Baillie, in an article in *Blackwood's Magazine*, November 1887.

* This study forms the 12th and 13th books of *The Literary Works of Leonardo da Vinci*, by Jean Paul Richter. London: Sampson Low, Marston, Searle, and Rivington, 1883, vol. ii. pp. 25–104, with 29 plates.

† "Die Baukunst der Renaissance in Frankreich," forming part of the *Handbuch der Architektur*, Stuttgart, 1898.

‡ In facsimile in J. P. Richter, vol. ii. pl. 81, fig. 2, and drawn as far as possible according to a scale in my *Renaissance in France*, fig. 16.

(2) There is a second reason which is not in favour of Mr. Cook's idea. It is very probable that "the aile de François I." was executed from exact or slightly modified designs of another celebrated Italian master, Domenico da Cortona, called Boccador,† the famous architect of the ancient part of the Hôtel-de-Ville at Paris, destroyed in 1871, and rebuilt with slight modifications in the actual monument.

Boccador was proprietor of a house at Blois from 1512 to 1531, when he was called by the King to Paris for the Hôtel-de-Ville.‡

I have shown that there must have existed at that time at Blois something like a central office of architecture for the royal castles on the Loire. Chambord must have likewise been planned at that office, and, as we now can see, according to a slightly modified model of Boccador's; and as this architect was, with Fra Giocondo, amongst the twenty-two Italians whom Charles VIII. brought from Naples to Amboise, 1495, it becomes almost certain that he is the principal if not sole architect of the block with the staircase of Blois.

However, I have much insisted on the fact that the styles of those buildings and of the French Renaissance from Charles VIII. to Francis I. show a continual *compromise of Italian and French elements*, due to the taste of that time and to the collaboration of French and Italian masters. If the influence of the Italians was not so considerable as was formerly believed in France, it was evidently far greater than has been admitted for the past twenty years or so by M. Palustre and his school.

Jacques Sourdeau may have collaborated in the invention of the staircase of Blois. In every case he was the *builder* of that block.

Mr. Crace is quite right when he thinks that the *structure* of that staircase is entirely rooted in the French Gothic. The almost complete identity of thought that prevails in this staircase and in two others of Chambord will be seen in the parallel I gave of these three in the illustrations, figs. 81–84 of my *Renaissance in France*. The affinity, often identity, of the mouldings and profiles, combined with the historical dates, leads one directly to the conclusion that Domenico da Cortona (Boccador) was the *spiritus zector* at the centre of that office, and of those buildings designed under the influence of a continual compromise with the French taste of those days.

As to Mr. Crace's question, Did Leonardo ever erect any example of ornamental architecture? I must answer that I am not able to indicate any. But from the whole of the information and studies of Leonardo I was led to say that Bramante was the only architect who may be considered as superior to Leonardo, though naturally nobody can know how far Leonardo would have risen had he devoted himself as much to architecture as did Bramante.

On plates 81, 103, and 104 of J. P. Richter's work I have reproduced three figures which give some slight notion of Leonardo's ideas concerning the ornamental decoration in architecture. He was perfectly capable of giving details as beautiful as those of any master of that time.

H. VON GEYMÜLLER
[*Hon. Corr. M.*]

Baden-Baden, 30*th March* 1903.

REVIEWS.

ANDREA PALLADIO.

Andrea Palladio, his Life and Works. By Banister F. Fletcher [*A.*]. *Illustrated by fifty-six Plates. Demy* 4o. *Lond.* 1902. [*George Bell & Sons.*]

The history of the art of the Renaissance in Italy is distinguished from that of Egypt, Greece, Rome, and the Middle Ages, in that it is the personal history of a number of artists who, all drawing their inspiration from the relics of Rome and reacting on one another, produced a new art, which may be said to have culminated, so far as architecture is concerned, in Palladio and his contemporary, Michel Angelo.

Many writers on the history of architecture have attempted, as did Rickman with Gothic architecture, to assign one form of building to a particular period, and have also often adopted a misleading nomenclature; or they have described a phase as "early" or "late," or "quattro cento" or "cinque cento"; or they have tried to prove that another form was peculiar to Florence, to Rome, or to Venice.

The truth is that in Italy, during the fifteenth and sixteenth centuries, each artist seized upon every new idea and created his own preferences in form and detail, so that the history of the art of the Renaissance must be the history of men.

No architect of that period more enthusiastically studied the monuments of Rome and the works of Vitruvius than Palladio, who by his superb genius gained a mastery in a new combination of units, and produced designs which remain as a legacy to architects for ever. His basilica and theatre at Vicenza, and his many palaces in the same town, his Villa Capra and his villa at Meledo had more influence on the style of succeeding architects, especially those of England—Jones, Wren, Gibbs, Kent and Lord Burlington—than any other group of buildings by one author; while his churches of S. Giorgio and Il Redentore at Venice will always remain as examples of his mastery and science in the use of columns of different scale.

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* See J. P. Richter, vol. ii. pl. 80, fig. 4.

† The details concerning Boccador, the châteaux of Blois and Chambord, will be found in my *Renaissance in France*, vol. i. pp. 75, 114–122.

‡ See J. de Croy, *Nouveaux Documents, &c.*, Blois, 1894.

Palladio's own books are, however, his best "life and works," and Mr. Fletcher would have been wiser to have selected another less-known architect, for surely the only excuse for a new book is that it shall be better than those already existing; and here it is curious to note that although the author makes great use of the four volumes by Octave Bertotti Scamozzi, entitled *Les Bâtimens et les Desseins d'André Palladio*, published in 1796, he does not even mention in his book, or in the bibliography, that most fascinating work by the same writer, *Il Forestiere Istruito delle Cose più rare di Architettura della Città di Vicenza*, published in 1761, which is practically a life of Palladio, and which, although only half the thickness of Mr. Fletcher's volume, contains much larger and finer illustrations of Palladio's designs.

There are a good many evidences of haste or carelessness in the book, which Mr. Fletcher would do well to correct in any future editions, such as repetitions of the following nature: "This order consists of half pilasters with entablature *one-fifth of their height* backed against the main order, and is not a happy arrangement. The entablature to this order is *one-fifth of the height* of the pilasters, and is broken at each intercolumniation against the main pilasters" (p. 46).

He also rather annoys us by his too frequent use of "our master" or "our architect" when speaking of Palladio, and by using Scamozzi's Christian name, Bertotti, all through the book, so that by the time the reader has reached the end he has quite forgotten that it is Scamozzi who is being quoted.

On p. 8, in speaking of Rome we have the following: "The four '*gates*,' however, still stood, those of the Rotunda, St. Adriano, St. Cosino, and St. Agnes; the finest of all being the Rotunda, wherein the ancients endeavoured to imitate by art that kind of Corinthian metal in which the colour of gold prevailed." And what is Corinthian metal?

We are told (pp. 9 and 10) that Baccio d'Agnolo having decorated the Palazzo Barbolini with windows and doors of pedimented form, this new form of art was copied by Raphael and Michel Angelo, and that later Palladio followed their example, and it eventually became the principal characteristic of his style. On p. 16, Mr. Fletcher tells us that Palladio's architecture was "essentially columnar and not fenestral," which seems contradictory but more correct.

In describing the Thiene Palace (p. 43), the author speaks of the first floor as being ornamented with Composite pilasters, and later, on the same page, he says the same pilasters are Corinthian. He further says that the façade is surmounted by an attic, while on the following page he mentions Scamozzi's condemnation of Leoni for showing an attic which does not exist.

Of the Barbarano Palace (p. 48) we have the following: "An attic plainly treated with square windows crowns the whole building, the columnar lines being carried up and supporting statues." One is led to suppose that the description is of the actual building and not Palladio's published design; but these statues do not appear in the photographs of the building or in Scamozzi's drawing published in 1761.

The Casa del Diavolo at Vicenza has generally been considered a work of Palladio. Mr. Fletcher points out that Scamozzi, in his great book on Palladio, gave many reasons why he thought it was designed by Vincenzio Scamozzi, but he does not mention the fact that B. Scamozzi in his earlier book attributed it to Palladio and gave equally good reasons for doing so.

The house for the Conte Adrien Thiene, described by the author as one of Palladio's doubtful works, Scamozzi says is generally believed to have been designed by the Conte Marcantonio Tiene.

The following sentence (p. 79) seems badly worded: "The façade is unusual, the walls being ornamented with Corinthian pilasters on pedestals." As there is nothing unusual in decorating a façade with Corinthian pilasters on pedestals, a further description seems necessary.

In the account of the church of Il Redentore at Venice (p. 84), the side wings or aisles are said to be ornamented with Corinthian pilasters, and in the next sentence they are described as half-columns.

The portico of the church at Maser, also, is given as hexagonal instead of hexastyle (p. 87).

The meaning of the following description of Palladio's designs for S. Petronio at Bologna is not very clear: "In two of these designs a single Corinthian order of two dimensions is employed, resting on pedestals of different heights in each design. The height of the columns is the same in each case, the entablature and pedestals being varied in position."

In spite of the defects pointed out, we have to thank Mr. Fletcher for a very useful volume, especially as the editions of Palladio are now becoming difficult to obtain. It is not too large to handle comfortably, and contains a very good selection of reproductions from Leoni's and Scamozzi's plates, and some excellent photographs from the buildings themselves; the book is also well printed and bound, but there is no index.

Francis W. Bedford.

AMIENS.

Bell's Handbooks to Continental Churches. Amiens. Crown 8o. 2s. 6d. [George Bell & Sons, York Street, Covent Garden.]

It may be said with truth that this, like other volumes of the series, is admirable. But, glancing through the pages, it appears that the tastes of the amateur have been considered rather more than those of persons who may wish to penetrate more deeply into the truly architectural mysteries of a mediæval cathedral. This does not necessarily mean that the substance appears superficial; not at all. But why should not the desires of an architect be more fully satisfied by even a small volume which deals with a strictly architectural subject? It might be too much to expect that for such a reasonable price we should be given material interesting alike to the technical student of architecture as a fine art, to the educated connoisseur, the historian, and the archæologist. Would it not, however, be possible to add, say, a chapter, eliminate some mediæval fables, and convert the series into genuine text-books for the use of students who wish to be architects? A few records of *details drawn to scale and figured* would be invaluable. Add to these some diagrams of the general composition and structure, also drawn to scale. Then the excellent selection of photographs would become intelligible. We could see what secret it was of size or curve in light or in shadow that made things beautiful. If we cannot turn to a section of an archmould in an arcade, of the base or cap of a pier, of a vaulting rib, or of a window-sill and jamb, with its tracery developments clearly shown, these pretty "views" are a mere idler's toys. They foster the wretched scrap-book method—or want of method—of many students. How few men there are who study one building well as a whole, how many who have painfully sketched and measured many buildings always in little bits, never one as a whole! If the examinations of the Institute severely required each man who sat for a test of his practical capacities to show a thoroughly intimate knowledge of one real work of architecture inside and out, from foundations to ridge, these volumes would become invaluable as guides of reference. A knowledge of structure, design, and history would be needed by this one claim. Then all the scraps could by degrees be collected and used as lasting illustrations of particular subjects for the benefit of all. Perhaps these few remarks may be admitted as a species of constructive criticism. The fact is this—these books are good, they are useful. May they not be better, more useful? They supply a want, a gap; can they not be made to fill up the void? Germs, seeds, let their scope be widened, and let them branch out to cover, protect, and foster the possible products to be nurtured in a larger field.

There is one small omission at which to cavil and so earn the title "critic." Page 11 says the reader will find the character of the vaulting used in the building shown on the plan at the end of the volume. He will be disappointed. There is no such useful diagram. It was forgotten.

Hubert C. Corlette.

SPECIFICATIONS.

Specification for Architects, Surveyors, and Engineers when Specifying; and for all interested in Building. [Published by the Builders' Journal Proprietors, 9, East Harding Street, E.C.]

In spite of the fact that the art of building is not so rapid in its progression as to justify an annual edition of such a work as "Specification," there can be no doubt as to the individual usefulness of the six volumes which have now been published. It is obvious that as each edition is largely a reprint of its predecessor, with the addition of extra notes, articles, and illustrations, the earlier issues become more or less obsolete. In spite of this drawback, and it is a defect which is only apparent to the regular subscriber, the volumes regarded singly contain a vast amount of information of special interest to the architect, surveyor, and engineer.

Specification No. 6 (1903) is conspicuous in this respect, and the ease with which one can refer to any particular subject points to the excellence of the system of classification adopted by the compilers.

"Specification" must by now be so well established as to render a recommendation that it find a place in every architect's office belated advice. In the current issue one of the most striking of the many innovations introduced is the division (II.) devoted to reproductions of working drawings of new buildings. Here are to be found typical examples of several classes of buildings, such as public libraries, hospitals, municipal buildings, breweries, &c. The plans, &c., are to a good workable scale, and include many valuable constructional details which cannot fail to be appreciated by those who have hitherto found such special information inaccessible.

While noticing the greatly improved binding, one would like to see the interleaved advertisements relegated to their proper place at the end of the book.

Frederick Chatterton.

ALLIED SOCIETIES.

THE NORTHERN ASSOCIATION.

Durham College of Science: Mr. W. H. Knowles's Address to Architectural Students.

For many years the curriculum of the Art Department of the Durham College of Science has included classes for architectural students. During the past session these classes have received fresh impetus by the addition to the staff of a teacher specially appointed to give instruction in architecture, and it is now possible to attend lectures at the College which cover the whole of the subjects necessary for the architectural pupil preparing for the examinations of the Royal Institute of British Architects. The results so far are exceedingly encouraging; the new facilities have been eagerly taken up by architectural students in the district. The lectures on "Architectural Form" delivered last session secured the very satisfactory average attendance of forty students. At the presentation of prizes to successful students in the Art Section of the College on 26th March a special address was delivered to the architectural pupils by Mr. W. H. Knowles, F.S.A. [*F.*]. He first expressed the grateful acknowledgments of local members of the architectural profession for the facilities offered their pupils by the College authorities, and he trusted that they would rise to a sense of their indebtedness by substantially contributing towards the maintenance of the Art Department. Addressing the students, Mr. Knowles said:

Your work during the past session shows a decided advance on previous years, and comprises many drawings of merit, and also a great number which could have been rendered with more appreciation for the subject and with greater care and precision of purpose. A report prepared by Mr. Plummer and myself bearing on the work lies in the room with the drawings. I will not, therefore, particularise here, but offer a few brief general remarks on the method and purpose of your studies.

In all your drawings put thought into every line, including the accessories, which should adorn and not detract from your study or design—nay, if the printing of titles and completion of details are executed in a slovenly manner it indicates a lack of real taste. All your studies should be thorough, careful, and accurate, rendered in a good line or wash, and with ample notes and comments. Do not be always dependent on T and set squares, but assiduously cultivate freehand sketching, and learn to render in a few bold strokes the object to be reduced to paper. Prefer one good solid study to many indifferent and meaningless sketches.

As the labours and student days of the true architect are never-ending, begin early to train yourself in a methodical and workmanlike method of taking notes and making sketches and measured drawings. In the latter do not aim at prettiness, but attempt to grasp the intention and methods of the original workman, the significance and value of colour and material, the salient and interesting features, and the proportions of the various parts in relation to the general composition. Your zeal must be untiring; there is so little that an architect should not observe; no detail, artistic or constructive, that should escape him. Build up, therefore, portfolios on all the styles, on modern appliances and the allied arts. The information will ever afford pleasure, and will frequently be of great service.

So much for the methods of your general studies and draughtsmanship. Now a word regarding your acquaintance with ancient edifices, with the classic orders and the styles of mediæval architecture. The lectures are but a part of your training, and should be supplemented by careful reading of the books recommended by the Royal Institute of British Architects, from which copious notes in your own words should be made, accompanied by drawings of the mouldings, ornament, and other details.

The most effective manner of at once providing "evidences of study" for the Royal Institute of British Architects and of becoming familiar with architectural form is to measure old work, of which, although Northumberland and Durham are not architecturally rich, there are many fitting examples within easy distance of Newcastle. Such studies should comprise a comprehensive series of drawings carefully delineated, with sections and details to a larger scale.

Nothing but good can result from a thorough acquaintance with the work of past ages and of a knowledge of the forms and proportions of good and beautiful work. All the best architects of recent years have exemplified this. If we turn to Mr. Norman Shaw, to Mr. Ernest George, or to the late George Edmund Street, or to our own townsmen, the late Robert J. Johnson and William Searle Hicks, we shall find ready evidence of sound scholarship. Only the most painstaking study and application could have enabled Mr. Shaw, the author of so much delightful domestic work, to produce in another style that most successful building known as Scotland Yard. Similarly, Messrs. Johnson and Hicks, the authors of innumerable Gothic churches of excellent character, have given us in the Classical style two of the finest buildings in Newcastle—viz. the bank and the Assurance Company's offices, both in Collingwood Street.

Be assured, a broad and full knowledge will not induce imitation, but arm you against the absurdities of passing fashions, against the eccentricities of mediocrity and vulgarity, against that desire at all costs to be original, which, being interpreted, often means extravagant exaggeration and occasionally positive ugliness. Instead of producing imitative ability merely, I think that an abundant knowledge will be productive of a proper and critical sense of proportion, composition, and refinement, and will quicken your interest and enable you to work with sympathy and enthusiasm.

Ever remember that architecture is a noble and enduring art. Let, therefore, your ideal be an exalted one, and always aim, in the least of your efforts, to clothe your work with simplicity and beauty.

MINUTES. XI.

At the Eleventh General Meeting (Ordinary) of the Session 1902-03, held Monday 30th March 1903, at 8 p.m., Mr. John Slater, *Vice-President*, in the Chair, with 22 Fellows (including 8 members of the Council), 27 Associates (including 2 members of the Council), and visitors, the Minutes of the Meeting held 16th March 1903 [p. 284] were read and signed as correct.

The Hon. Secretary announced the decease of the following members:—John Bond Pearce, of Norwich, *Fellow*, elected 1879; Samuel Stenton Markham, of Guildford, elected *Fellow* 1856, transferred to the Class of *Retired Fellows* in 1897.

The following Associates attending for the first time since their election were formally admitted by the Chairman and signed the register—viz. Frederick Billinghurst Chester and Charles Edmund Lancaster Parkinson.

A Paper by Mr. Horace Porter [*A.*] on FIRE PREVENTION AND FIRE RESISTANCE was read by the author, and Mr. H. D. Searles-Wood [*F.*], *Hon. Sec. Science Committee*, read the report of the Science Committee on the Fire Offices' Regulations for Standard Fire-resisting Buildings. A discussion thereon ensued, and a vote of thanks for his Paper was passed to Mr. Horace Porter by acclamation.

With regard to the recommendations of the Science Committee, the Chairman stated that the Council would use their endeavours with the Fire Offices in order to bring about such revision of their rules and tariffs as seemed necessary for the encouragement of fire-resisting construction.

The proceedings then closed, and the Meeting separated at 10 p.m.

LEGAL.

Architects' Responsibilities.

GEARY, WALKER & CO. *v.* LAW & HARRIS.

In the Lord Mayor's Court, on the 23rd March, before the Recorder (Sir Forrest Fulton, K.C.) and a jury, the case of Geary, Walker & Co. (Ltd.) *v.* Law & Harris came on for hearing and was disposed of. The plaintiffs, a firm of wood-block flooring manufacturers, of 11, Queen Victoria Street, sued Messrs. Law & Harris, architects, of Northampton, for the sum of 7*l.* 19*s.* 1*d.* for work and labour done. Mr. Gaveen was counsel for the plaintiffs, and Mr. Pease represented the defendants. Mr. Lawrence Walker, managing director of the plaintiff company, said their company had entered into a contract to lay certain wood-block flooring at the Barry Road Schools, Northampton. In May last, after the work had been carried out, the defendants, who were the architects, complained that certain of the flooring required to be rectified. It was explained that the swelling of the flooring was due to the dampness of the building, and that if they were required to do any extra work they would be legally entitled to be paid for it. This complaint was made on 8th July, and the flooring rectified without charge. On 1st September they received a communication from the defendants to the following effect: "Will you please send a man to set this floor right?" and on 4th September a telegram was received from the same source: "Send a man at once to repair the flooring." As a consequence they sent a man to do the work required, and it was in respect of this work that they now sought to make the defendants liable. Cross-examined, the witness admitted that the work of laying the floor was to be done to the satisfaction of the architects. It was necessary that the defendants should give a certificate for the flooring work before the builder could get payment and settle with them, the plaintiffs. They had obtained payment for the bulk of their work through one Mr. Hawtin, the builder. It had since come to his (witness's) knowledge that his firm had sued the builder for the extra work they had done in rectifying the flooring. The action was settled, however, and the items in respect of the flooring withdrawn. Mr. E. Harrison, in the employment of the plaintiffs, said that in August he received a communication from his firm to proceed from Birmingham to Northampton to inspect some flooring work. The flooring he saw had swollen in consequence of the damp. Mr. Harris said he was perfectly well aware of the cause of the defect, and said he should require it put right. The result of the interview was that he (witness) said his firm would require payment for the extra work, and the defendant, Mr. Harris, said they were not to be paid. For the defendants Mr. Pease said the question to be decided was whether architects, in such a case as the present, could be made personally liable for work such as the plaintiffs had done. In the case in question the Northampton School Board had employed a builder who undertook to do the necessary work of erecting a building for a certain sum of money. The defendants were employed as architects to act between the building owner and the contractor, and it was their duty to see that the work was done properly, and from time to time to issue certificates as the work progressed. The plaintiffs, as sub-contractors, were employed to do certain flooring work. In the opinion of the architects the flooring laid by the plaintiffs was not properly done, and the architects called upon the plaintiffs to rectify it. There was no doubt that the defendants never undertook to be personally responsible for payment of the work at rectification. All the defendants had to do in the matter was to give a certificate when the work was done, and when once the certificate was given the School Board authorities would pay the builder, and the builder would settle with the plaintiffs. Mr. Sydney Frank Harris, member of the firm of Messrs. Law & Harris, architects, Northampton, said his firm were employed as architects in the erection of the Barry Road School, Northampton, being employed by the Northampton School Board. They had prepared the specification in which the plaintiff company's name was inserted to do the wood-block flooring. During the latter portion of the plaintiffs' work he (witness) refused to grant a final certificate until certain defects in the flooring were set right. He had told the plantiffs' representative that he could not certify for the work until the rectification was done. He also said that if the work was not done so that the schools could be opened by a certain date he would have to get the work done and charge the plaintiffs with it. He had sent the letter and telegram to the plaintiffs in September as a last chance for the work to be carried out by them.

The Recorder, in summing up the case to the jury, said that the case was the first of the kind that had ever been brought to his notice. The defendants were employed by the Northampton School Board to act as architects in the matter of the erection of a building to be used as a school. The defendants, as architects, were dissatisfied with certain flooring work which the plaintiffs had done, and their contention was that in requesting the plaintiffs to do the work properly they were merely acting in the ordinary scope of their authority as agents for the School Board. It was not a case of work having been ordered recklessly and without the authority of the defendants' employers. It was for the jury to say whether the plaintiffs had satisfied them that the defendants, in insisting that the work should be done by the plaintiffs, had made themselves liable for the account.

The jury found a verdict for the defendants, and judgment was entered accordingly.

FOUR MODERN HOSPITALS.

By Edwin T. Hall [*F.*].

Read before the Royal Institute of British Architects, Monday, 20th April 1903.

IT is with great diffidence that I approach the subject of my paper this evening, because it relates to my own works. When invited to address you on the subject I felt an objection to intrude my own wares, but was assured that a practical paper dealing, not with hospitals in general, but with concrete examples on which I had personally laboured, would be of interest. I can only ask for your kind consideration if I tax your patience, and without further preface I will proceed.

There are four kinds of hospitals which just now are engaging a good deal of attention, viz.:

1. Those for Scarlet Fever, Diphtheria, and Enteric Diseases, which are generally grouped under one staff.
2. Those for Small-pox.
3. Sanatoria for Tuberculosis or Consumption.
4. General Hospitals.

On the walls are illustrated one of each kind, viz.:

1. The City of Leeds Fever Hospital, at Seacroft.
2. The City of Leeds Small-pox Hospital, at Killingbeck.
3. The Sanatorium, at Frimley, in Surrey, for the Brompton Consumption Hospital.
4. The Camberwell Infirmary.

A few preliminary observations on each type may be desirable.

Infectious Hospitals differ from general hospitals, principally in that they are held to require more isolation, not only of the whole, but of the parts, and greater cubic space per patient.

A Small-pox Hospital is required to be at least a quarter of a mile from any other hospital or village. The reason for this is that within that distance small-pox virus is said to be infectious and dangerous. A Local Government enquiry in 1881, in relation to a hospital in town, resulted in the Commissioner reporting that "an almost constant ratio is observed between the amount of the hospital operations and the degree of the excess of small-pox in the neighbourhood."

Scarlet Fever, Diphtheria, and Enteric Diseases are not so virulent, and a zone of forty feet is considered sufficient as a minimum for the public safety.

The cubic space required per patient for small-pox and scarlet fever is 2,000 feet, but for diphtheria and enteric 2,500 feet. I cannot but feel that these are arbitrary figures, because much must depend on the efficient ventilation and constant change of air in a ward.

For *Consumption* there is no fixed standard, and rarely are two hospitals alike.

The treatment thirty years ago with closed windows and the avoidance of open air has now given place to open windows or none at all—indeed, to sleeping in open rooms or shelters, and manifestly the question of cubic space hardly arises where the room is partly unenclosed. Dr. Latham, in his King's Essay, suggests 1,960 feet; but in Sanatoria the actual practice varies from 1,000 to 3,000. It seems to me that floor space is of much more importance, and by that I mean space adequate to, but not exceeding, what is necessary for furniture and general convenience.

In regard to the isolation of Consumption Hospitals there is no rule, and apparently none is required, as to a safe zone. The danger of communicating this disease appears to arise primarily from the sputum of infected persons, and secondarily from bacillus-laden dust in the room in which an affected person may reside. There are consumption hospitals close bordering on main thoroughfares in cities, and, as far as I know, it has never been alleged that the inhabitants of immediately adjoining buildings or passers-by have suffered in any way. For Sanatoria the practical element which fixes the distance of a building from a highway is the necessity of guarding the patients from wind-borne dust, which may contain fæcal poisonous matter, and at the best is an irritant to the sensitive throat and respiratory organs.

General Hospitals are a class by themselves. Their location is determined (1st) by the necessity for their being in the midst of their *clientèle*, so to speak. They are wanted, broadly speaking, where population is most dense, where risks of accidents are greatest, where the indigent poor may have easiest access whether as in- or out-patients. (2ndly) They must be within easy reach of the honorary medical staff, men of the greatest practice and experience, so that (*a*) the poor man broken on the wheel of industry or vice may be promptly attended to, and (*b*) the medical schools which form so important and valuable a feature of our great hospitals may have the advantage of learning from the great masters of their art.

In these circumstances a greater number of patients per acre as compared with that of the suburban or country site of an infectious hospital becomes a necessity of the case; the height of buildings is of practical necessity greater, and, relative to height, the distance apart is much less. The planning of a general hospital in a town demands, therefore, very great care to make the most and best use of wind currents and sunlight for patients, for staff, and for schools. The minimum cubic space for patients in these hospitals has been standardised for the Poor Law patients, and with otherwise proper hygienic conditions this appears to be adequate for all, although anything more is desirable for greater convenience and the sense of greater airiness.

Much has been said at one time and another about the maximum number of patients that may be housed per acre on open sites, but there appear to be as good results with hospitals—otherwise hygienic—having a larger as compared with those having a smaller number of patients per acre.

Another item for consideration is the maximum number of patients that may be dealt with in one hospital. There appears to be no necessary limit beyond that of convenience of general medical supervision.

The Local Government Board do not favour a greater number than about 500 for an infectious hospital, and for a Poor Law infirmary about 800. As to what is adequate accommodation for any town, much will depend on the character of the place, whether it be residential or manufacturing, whether the inhabitants are poor or well-to-do. For infectious hospitals it is usual to assume that one bed per thousand inhabitants is sufficient, but this is only a rough average, to be adjusted in consultation with the medical officer of health and a study of many circumstances. In London, for acute fever cases, 1 in 1,000 is about the present accommodation, or, allowing for convalescents, 1 in about 750. These standards are more or less for the normal requirements. Small-pox is more troublesome. We thought a few years ago it was stamped out in London, but it was imported again, and the late epidemic cost the Metropolis for hospital provision, equipment, and maintenance about £491,000. In provincial cities there appear to be cycles of small-pox. There are years and seasons and climatic conditions more favourable to its epidemic character than others, just as there are seasons when mushrooms and other fungoid growths are most luxuriant. Medical experts of the greatest experience say regular vaccination and periodical revaccination would render the disease innocuous. I am not, however, dealing with the medical aspect, but with constructional provision for dealing with the disease. The ideal course appears to be to erect a hospital of moderate dimensions, fully equipped with staff and administrative buildings on a liberal scale. This will be the first line of defence when the attack comes on, and the immediate segregation of the patients, combined with the removal of their families to quarantine cottages and the disinfection of their homes, may stamp out the disease. If, however, it unhappily spreads, then the hospital proper can be extended by tents or temporary buildings grouped round the permanent nucleus, with satisfactory results.

Consumptive Sanatoria are numerous on the Continent, particularly in Germany, where the State has taken them up. Here they are only in their numerical infancy, but they are likely to grow largely in numbers. If for no other reason, they are justified as schools of domestic and personal hygiene. Patients may or may not be healed entirely of their disease, but they are taught the value of cleanliness, of exercise, of fresh air, of regular habits, of order and self-respecting discipline, and they go back as missionaries to their families and friends.

I think we may now leave general reflections and come to particulars.

First, as to site. All kinds of infectious hospitals should be away from a densely built neighbourhood. First, for the sake of the community. Secondly, for the sake of the patient, because the air is purer, free from the smoky and other exhalations of a town, and consequently there will be more sunshine. Thirdly, the land is cheaper, and therefore larger areas can be obtained for less money than small ones in a town. As the patient will be for a considerable time resident, the cost of transport is a bagatelle. Fourthly, there will be greater choice of a suitable site on elevated ground with trees and other amenities.

For a general hospital in a town, get a site as open as possible, and preferably surrounded by roads which form wind channels to change the air. Avoid low-lying land with a shallow gravel subsoil, which is likely to be sometimes filled with subsoil water.

I have already said that public small-pox hospitals are required to have a $\frac{1}{4}$-mile zone around them. This means, in fact, that the land forming the hospital estate must be 130 to 160 acres in extent, and in the heart of this, shut in by a ring fence, must be the portion reserved for patients.

For mixed fever hospitals a zone is required to protect, not only the public, but also those suffering from different diseases. But where the site is large enough, the isolation of the pavilions or ward units should be considerable for the comfort and pleasure of the sick. Prospect, sunlight, trees, and gardens are all aids to recovery. I saw not long since the designs for a large hospital containing many wards over 100 feet long, separated only by division walls, lighted by skylights except for an end window in each ward. To my mind nothing could be more depressing for a patient, and consequently more likely to retard his recovery, which, from the public point of view, means adding to the cost of his treatment.

Next, as to height. In the judgment of the best authorities, no hospital on a rural site should be more than two stories in height. One is the medical ideal, but it demands twice the area of land. The Metropolitan Asylums Board generally adopt the two-storied type with external staircases. At Leeds we have the one-storied. In all the best modern examples of hospitals the main wards are placed with their axes north and south when this is practicable, with windows on both sides and at the ends. Thus, every bed and every wall gets all the sunlight there is during some part of the day. Never have double wards, that is, wards with a central wall and rows of beds on each side of it.

For consumptive sanatoria, as distinct from hospitals, large wards are not adopted; the ideal is a single room for each patient with a southerly aspect in a building not more than two stories in height. In Germany, most of the best known sanatoria are of three, four, and five stories in height, but it is manifest that the necessary stairs are trying to the staff and patients, and, if power lifts be used, the expense of maintenance is greatly increased. The risks from fire are much greater, and the upper floors receive the exhalations from the lower.

On a city site relatively high buildings are, as I have said, a necessity. They will, of course, have lifts and thoroughly aërated staircases for access and for fire escape. Three or four stories are suitable.

I am not dealing with small hospitals, but have in mind those with 100 to 800 or more beds.

Some laymen not acquainted with our modern public institutions think a hospital, especially a fever hospital, is one building; but it is almost a village, with thirty to fifty separate buildings, and a staff of 200 to 300 or more persons. In one of my hospitals we had within the curtilage six miles of drains, twenty-nine miles of water and steam pipes, and forty-two miles of electric wire, and I should think at Seacroft we have eight to nine miles of drains.

I may perhaps now proceed to a description of each of the hospitals illustrated on the walls.

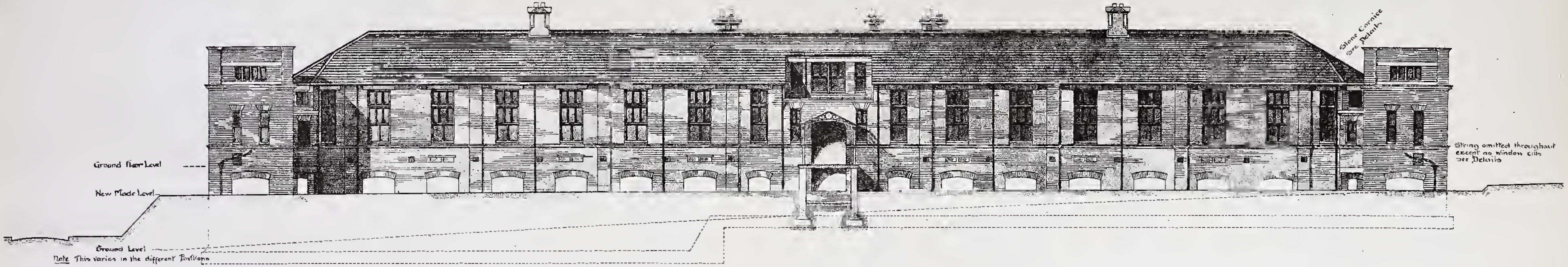
CITY OF LEEDS FEVER HOSPITAL.

The City of Leeds Fever Hospital is at Seacroft, about three miles from the centre of the city. The site was formerly a beautiful park, and, needless to say, we have kept the trees wherever possible. The area of the hospital grounds is forty-one acres, and from one end of the building to the other is about a quarter of a mile. My clients were desirous of making their hospital worthy of their city, complete and perfect from a medical and administrative standpoint, and with this view laid no restraint on me except that I was not to be extravagant, as infectious hospitals are not usually visited for pleasure. I have tried to make my buildings sedate and dignified, and above all, to assist the medical staff by applying sanitary principles throughout. It was rather an alarming instruction to me that beneath practically all the area was a worked-out coal mine, leaving a void some yards in height. On this I had to build, and to avoid local settlements in my buildings I placed each on a raft composed of cement concrete, 2 feet thick, with a gridiron of steel as a backbone. The hospital proper consists of forty-two separate buildings. It is a community in itself, presided over by a medical superintendent with three medical assistants, a lady superintendent or matron with her assistants, and a staff of 102 nurses and seventy-two female servants. The male officers and servants number about thirty-eight. Accommodation is normally provided for 452 patients, but in cases of emergency a much larger number can be received.

THE CITY OF LEEDS

SEACROFT INFECTIOUS HOSPITAL

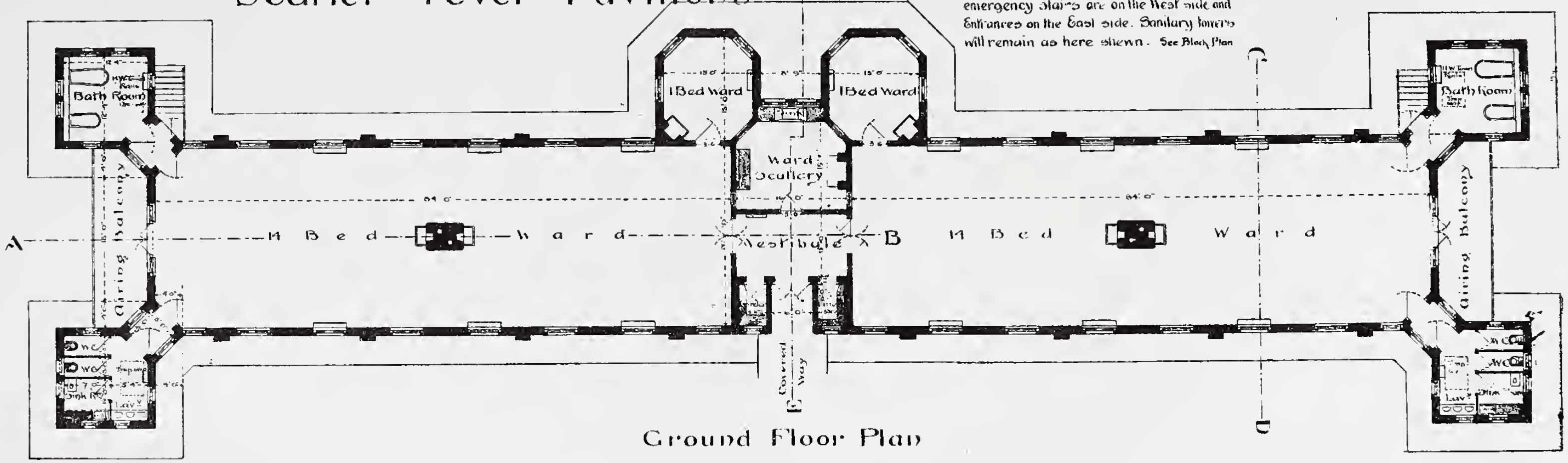
Scarlet Fever Pavilions



Front Elevation

Scarlet Fever Pavilions

-NOTE. Nos 1.3.6 & 8 will be similar-
but centre portion between Sanitary Towers
at each end reversed so that 1 Bed Wards and
emergency stairs are on the West side and
Entrances on the East side. Sanitary towers
will remain as here shewn. See Block Plan



Ground Floor Plan

C.F. KELL & SON, LITH. 8, FURNIVAL ST HOLBORN, E.C.

Attached to the hospital is a quarantine station of many cottages, to which infected families are removed until danger is past.

The scheme of the block plan is as follows. The main entrance from the highway is guarded by a lodge. From this a private road within the grounds runs all round the buildings, with a branch drive to each block. In the centre, within the private road, are the administrative buildings. To the east and south-east the scarlet fever wards, with a convalescent home at the north-east corner, with playing fields close by. To the south-west are the diphtheria wards, to the west the enteric wards, and to the north-west the laundry, engine and boiler houses, &c.

Grouped near the lodge are: (1) To the west, in one group, the mortuary, mortuary chapel, with waiting-room for mourners, pathological laboratory, and post-mortem room; (2) to the south of this the ambulance station; (3) a waiting-room for visitors to patients; (4) the discharge block for patients.

The medical superintendent's house is further to the east, in its private garden; the steward's house commands the road to the stores yard; cottages for sixteen married officers, engineers, &c., are further to the east, accessible only from the highway. At the extreme east is a club house for the employés, with concert room, &c.

Facing the central staff entrance is a clock and water tower, 22 feet square by 110 feet high, forming a landmark for miles around. Here we store 125 tons of water. The clock-dials, 8 feet diameter, are illuminated.

The administrative buildings consist of: (1) The offices, with residences for the matron, for the assistant medical officers, for resident porters and others; (2) the nurses' home, containing 121 rooms; (3) the female servants' home, with eighty-four rooms; (4) dining-rooms for nurses and servants between the homes and the kitchen; (5) the hospital kitchen, steward's stores, dispensary, staff consultation room, sewing room, &c.

A complete laboratory, with students' rooms, forms another building.

To the east and west of this group, on the main covered way, are patients' admission rooms to the different parts of the hospital.

Every part of the hospital is connected by glass-covered open ways, with subways beneath for steam, hot and cold water, and gas pipes, electric mains, &c.

In Germany it is not common to have covered ways, and everyone has to pass in all weathers from one part of the hospital to the other without any protection, and there are advocates of this practice in England. It seems to me to be quite a barbarous custom to expose the staff in this way, to say nothing of food, linen, and other stores, &c., distributed from the kitchen and other centres.

Subways are admittedly a practical necessity for steam, hot and cold water, and gas pipes, electric cables, telephone wires, fire alarms, and at little cost a covered way can be formed over this subway. The enclosed corridor is an error in the other direction. It too often forms a conduit for fire and smoke, and at the best is a channel for foul air and infection.

Hospital Pavilions.—It will be seen the pavilions are grouped in pairs, with fuel store and nurses' lavatories common to both on the cross corridor. Beneath these staff offices is the heating chamber. Each pavilion is axially north and south, with windows on both sides and at the ends. It has an entrance hall with the duty room opening from it. To right and left are large wards, each containing fourteen beds, and opening from these are single-bed wards, all overlooked from the duty room or ward kitchen.

Each large ward has a wide balcony at the extreme end, flanked and sheltered by the towers, containing bath rooms, lavatories, and w.-c.'s, and near these is an external flight of steps leading to the grounds.

Beneath every pavilion is a paved open basement, about five or six feet high, forming an aërial disconnection of the wards from the earth. In this all pipes and cables are placed, so that repairs can be done without coming inside the building. The smoke flues are also swept from beneath.

I have noted that we have fourteen beds per large ward. The bed unit for a ward varies: the Metropolitan Asylums Board fix it at twenty for scarlet fever, and have but one such ward on a floor. For acute cases this demands, I believe, the service of a sister or charge nurse, and two assistant nurses; but where large wards can be arranged on the same level, medical men consider the most economical unit to be fourteen beds per ward, as by making one ward for acute patients and the other for convalescents, the twenty-eight with two single-bed wards can be managed satisfactorily by the same staff.

For diphtheria the Asylums Board fix twelve per ward, as these cases require more personal attention. We have fourteen at Leeds.

Returning to the pavilion. Our ward floors are of polished teak laid direct on the concrete. Some advocate terrazzo, but that is much colder to the feet and less sympathetic than wood, and, further, it always cracks when laid in large surfaces. The walls are of cement painted and varnished to match the faïence chimney-pieces. I went to a lot of trouble some time ago in the hope of getting tinted glass in large sheets for wall covering made to be set directly on to the brick walls. My object was to get a perfectly sanitary and impervious covering with a permanent decoration. I was in correspondence with English and foreign glass-makers, but in the end we were obliged to abandon the idea as impracticable. The heating is by passing fresh air over hot-water radiators at a calculated low velocity, so as always to be changing the atmosphere of the room, and this is done completely three times an hour. The extraction is by fire and aspirating flues. On the wall I show my design for the stacks of fireplaces, smoke, and ventilating flues. These are of faïence, forming a sanitary surface of various artistic colours, and are only 3 feet in diameter. Stoves with horizontal flues in the floors should never be used in infected buildings. They are dangerous and dirty.

Heating should never be done by pipes laid in channels with gratings over. These become receptacles for dust and filth of all kinds. Horizontal pipes in a ward are again objectionable. The best form of heating is by accessible radiators fed by vertical pipes from beneath. These should be enclosed by iron cases with adjustable gratings. The inlet of cold air should be controlled to suit the varying wind pressure. Steam heating is not nearly so good as hot water. The former burns up or dries the air too much.

It will be seen we have here natural as opposed to artificial ventilation, such as that usually called the Plenum system. In my judgment the latter is a mistake in any hospital.

The windows extend to the ceiling. They consist of a pair of sashes and a fanlight with glass spandrel cheeks. The sashes are made so that cords can be renewed without taking the sash out. All angles of the walls are, of course, concave. All doors are fitted so that they cannot slam.

A word as to sanitary fittings may be of interest. Ranges of lavatories should have no long wastes, but should have short vertical straight wastes discharging into a floor channel. They should not be enclosed or have any supports on the floor. Patients' baths should be of glazed stone-ware, kept well off the floor. The bed-pan sink is an important detail, and on the wall is a drawing of one designed by me. It looks simple, and so it is, but it took many months to work out. As compared with others it has these points of simplicity—it uses about half the water of any other; no water stands in any pipe when out of use; one flush not only feeds the rim, but spreads a palm-like wave which, entering the bed-pan handle, thoroughly cleans everything.

The electric lighting consists of reversible night-lights, nurses' lamps, bedside lamps for examination of patients, &c.

Isolation Pavilions.—In addition to the main pavilions, we have four isolation pavilions. These are for doubtful or complicated cases. They consist of wards of one, two, and four beds each, with nurses' rooms and special sanitary accessories for treating different diseases.

In each of the diphtheria pavilions we have an operating room with side and top light.

Operating Theatre.—We have a small but complete operating block for severe operations, especially for enteric cases. This contains an anæsthetic lobby, a theatre, and a sterilising room.

Staff Quarters.—Taking the nurses' home, we have without extravagance everything necessary for comfort. There is a large recreation room, a writing room, a library, a third sitting-room for probationers, a suite for the home sister, ample offices, and a separate bedroom for each nurse. Every bedroom is heated by hot water, has fresh air inlet and foul air outlet. The outlets from all the rooms are connected to a trunk shaft in the roof, attached to which is an electric fan. The whole is so designed and regulated that without draught the air must be drawn from the room. This building, and, indeed, the whole hospital, is of fire-resisting construction, and it will be seen we have here three staircases, so that, humanly speaking, everyone can escape in case of fire if any one staircase is blocked by fire or smoke.

The Hospital Kitchen is a room 50 feet long with a large scullery attached. Close by is a large bakery to supply this and the adjacent hospital. Cooking is by steam, by coal, and by gas. There is a group of larders facing north and arranged with through currents of air.

The Steward's Store is 60 feet 6 inches by 25 feet 7 inches, with a gallery round. It is fitted for furniture and all kinds of general stores for the community. There is a dispensary, and close by is a room for the medical examination of staff. From this centre enclosed trolleys convey food and stores to all parts of the hospital.

The Laundry, again, is an important building. We have one for patients and another for staff. Near the entrance to both is the disinfecting house and the destructor. All unconsumed food and pieces are burnt. The disinfector is a steam one. It may be of interest to note that in some hospitals every letter written by patients or staff passes through the apparatus before being stamped and posted.

The drying of clothes should be done by hot air passing at great velocity over and through the linen and flannel. With a temperature of 160° a horse-full of the largest articles can be thus dried in 20 to 30 minutes.

The Engine-house will contain three large direct coupled dynamos to light both this hospital and the Killingbeck hospital. The heating of both will be done from this centre. It will be understood that a small-pox hospital may be vacant for months, or even for years. To have a separate boiler and engine plant in such a place means keeping a staff of men in comparative idleness merely to look after them, and then the machinery would perish from lack of use. I therefore decided to work all from the Seacroft centre, where of necessity all machinery is in daily use. Of course there is a separate laundry and disinfector at the other hospital.

A word as to the heating at Seacroft. We are at Leeds troubled with water which destroys all kinds of wrought-iron pipes, plain or galvanised. For cold water I am therefore using tin-lined iron pipes. For hot water it is generally found necessary to use copper, but with the many miles of pipes required for heating and domestic services throughout this large place, the cost was prohibitive. At present I am experimenting with a vitreous enamelled cast-iron pipe, and hope to use this. Instead of letting the exhaust steam from our various engines go to waste in the usual way, we collect it and use it for heating. In like manner we collect all our condensed water, all the cooling water from electric engines, &c., and this is filtered and pumped at 180° into the economiser. In this way we shall, when our engines are running, do the heating and hot water supplies for nothing. This means a saving of some hundreds of pounds a year. In hospital practice it adds no small amount of labour to the architect, who wishes his building to be successful, to study and lay out the heating schemes, to weigh and consider every detail in the light of experience.

In speaking of another hospital I shall describe another type of heating.

Drainage.—In an extensive range of buildings the drainage, again, requires considerable study. It is next in importance to the buildings themselves.

The mains or hospital sewers should be efficiently ventilated in sections, so that fresh air may pass through every part. There should be no connection between the drains of the different diseases, or between any of them and those of the non-infectious staff buildings. All should be separately ventilated in short sections. There should be flushing tanks at the heads of drains, and it is my practice to carry all bath water into flushing tanks, so that the soapy mixture may go away with a rush rather than dribble and deposit soapy sediment.

The treatment of sewage is a large question, but the architect has, in conjunction with the doctor, to deal with some special points. Here we have a sewage irrigation outfall, and, naturally, there is necessity for excluding typhoid germs. There is no apparatus that I know of which deals with these dangerous enemies, and I have been engaged in devising one, of which drawings are shown on the wall. It consists in receiving tanks and boilers for alternate use. The typhoid sewage is received and boiled by steam, after which it passes to cooling beds, and thence to the outfall sewer.

I fear you will weary of so much detail, but it is all intensely pressed on your attention when you have to deal practically with hospital work.

CITY OF LEEDS SMALL-POX HOSPITAL.

The Killingbeck Hospital is situated on the top of a hill, with undulating country all around. The grounds proper are twelve acres in extent, but the total attached area is 140 acres. The approach from the road is ¼-mile in length, guarded by a lodge near the highway, with the visitors' waiting-room close by, where hospital suits must be donned before admission is given.

The hospital buildings are grouped together on the summit of the site, the offices and medical quarters being in the centre, the laundry and mortuary to the west, the discharge block to the east, all outside the hospital road.

Entering in the centre, the nurses' and female servants' homes respectively are to the west; the kitchen and stores, dispensary and serving-room to the south; the male servants' home to the east. Beyond, to the north, lie three large pavilions and two isolation blocks, while the admission block to these is at the junction of the covered ways.

Provision is made in the admission block for bathing a patient, and for his examination by the doctor; while the ambulance nurse has her rooms adjacent.

I have already gone into so much detail as to infectious hospitals generally, that I need not detain you by describing differences between this and the scarlet-fever hospital. I may, however, refer to the mortuary. You will see it has no visiting room for friends to view their dead, but it has, under a portico, a plate-glass sarcophagus, into which the body, suitably dressed, is placed from the mortuary on a rolling bed. The visitor, standing in the open air, can thus see the dead, but cannot come in actual contact with the body.

As before mentioned, this hospital will be lighted and heated, and its laundry supplied with steam, from Seacroft. To enable this to be done we tunnel under the highway and carry a covered trench right up the hill. This will contain water, steam, and gas mains, electric cables, &c. All the condensed water is brought back and pumped up for use again.

In drainage we have another problem to face. Next to having no fall at all for main drains, too steep a fall is the worst evil, and as the hillside down which our drain has to come is very steep, we have to get reasonable gradients by a series of what may be called weirs in our pipes.

This hospital, it is hoped, will form an adequate nucleus, in the event of an epidemic, for dealing with a large number of patients. Having regard to its necessary isolation for a repulsive disease, I have been compelled to eschew anything beyond the merely utilitarian in design.

THE FRIMLEY SANATORIUM FOR THE BROMPTON CONSUMPTION HOSPITAL.

We now come to consider a type of building dealing still with infectious disease, but of a character which until lately was regarded as interesting. The delicate heroine, with the hereditary hectic flush which made her beauty pathetic, has to give place to the less romantic person who, were she freed from the polluted atmosphere of a close and germ-dust laden room, would probably never know the disease from which her parent suffered.

Abroad, particularly in Germany, Sanatoria for the reception and open-air treatment of persons suffering from tuberculosis, or consumption of the lungs and throat, have existed for many years; many of them are large, some are run medically on commercial lines, some subsidised or sustained by the State insurance companies. Nearly all are many-storied single buildings—some like hotels, some like barracks, and some like hospitals. But those who are catered for need neither hotel, nor barrack, nor hospital, but something which, compounded of all three, shall have added brightness, briskness, sun, and air.

I have tried at Frimley to incorporate this idea—to get away from the hospital, to suggest breeziness and health, and the pleasant atmosphere of a large home. The institution consists of sixteen buildings. The patients' block is cross-shaped, with accommodation for eighty-eight patients in four two-storied radial pavilions, and for twelve in the centre where special cases may be under closer surveillance. Every patients' room faces S., S.S.E., or S.S.W. My first design was for putting the eighty-eight patients in single rooms; but this was overruled. For the King's Sanatorium, however, my original plan was, as I have since learned, shown to His Majesty and to Sir Ernest Cassel, and the committee came to the same conclusion as that I had originally contemplated.

We have lately seen many plans for new sanatoria with detached blocks at considerable distances apart, but I cannot think such plans desirable. At Nordrach Dr. Walther's colony consists of several small buildings or cottages, with one modern building for twenty patients; but this merely arises from the fact that that gentleman began in a small way with what he could find at hand, and increased by taking what he could get; the whole, too, is but a small place. With malignant diseases considerable isolation is recommended by all medical sanitary experts, for obvious reasons; but in Sanatoria these reasons do not hold, nor has experience shown that there is any gain by this wide isolation. If there is no gain there is much loss. Concentration means easy supervision, ready access by the doctor in cases of sudden hæmorrhage, a smaller staff and less waste in long walks by servants and nurses.

In Germany, as noted, this concentration is carried to an extreme. I have tried to find a mean. We have 100 patients all within a radius of 195 feet from the doctor's consulting room and matron's sitting-room, and yet every room has an open outlook; all are away from noise and bustle, all have the greatest amount of sun, and all are sheltered.

It will be noted that in addition to the two main staircases we have a fire-escape staircase at the extremity of each pavilion; and further, that two of the pavilions are cut off from the other two by means of a corridor of fire-resisting construction, with a glass roof. The shelter afforded by the recess will be used for reclining couches.

Another advantage I claim for this plan is that we can get ample classification. We can have units of twenty-five males or females, with their separate group of closets, bathrooms, and lavatories, or we can arrange convalescents by themselves or make other divisions of patients in units of eleven. The sanitary towers are detached, connected by gangways. Each contains bath rooms, w.-c.'s, a staff room, a lavatory fitted with basins and available for hair-cutting. I have also made boot rooms attached, in which patients coming in from the grounds may change their boots.

It will be seen that we have but one day-room on each floor. The great aim of a Sanatorium is to get the patients out into the open air for their recreation, not to encourage them to remain within.

It will be noted that provision is made by which beds can be wheeled out on to the terrace, and at the extremity of each of the pavilions there is a sun room formed in the turret for patients in the end ward, in addition to a balcony.

The central hall forming the principal entrance to the institution will, I expect, become an adjunct of the day-room. Usually the patients will enter by the doors at the east and west staircase halls.

Facing and to the north of the main entrance is the assembly or recreation hall, and to east and west of this the dining-rooms, with their serving-rooms attached, in close proximity to the main kitchen. To the extreme east is the nurses' home, and to the other extreme the home for the medical men.

Architecturally, quiet, homelike dignity has been sought. Long plain roofs of brown tiles, tile-hung upper stories, and red brick walls beneath, appeared to me suitable to the evergreen background. Stone has been sparingly used to emphasise special features. The question of verandahs had to be considered. There is great difference of opinion among doctors as to whether there should be roofs to the terraces and balconies. Some hold them to be very desirable, others object that they make the rooms close and dark. In my report, two years ago, I recommended as the best solution the adoption of rolling canvas shop blinds, and this we have adopted. We can roll them up on dull days, and lower them when the sun is soaring in a cloudless sky.

The heating of the rooms is again a special point. From the outset I set my face against fire-places as a rule, although it was decided to have a few. They are, speaking generally, unsuitable to rooms where doors and windows are normally wide open; they are dirty, and patients' throats are irritated.

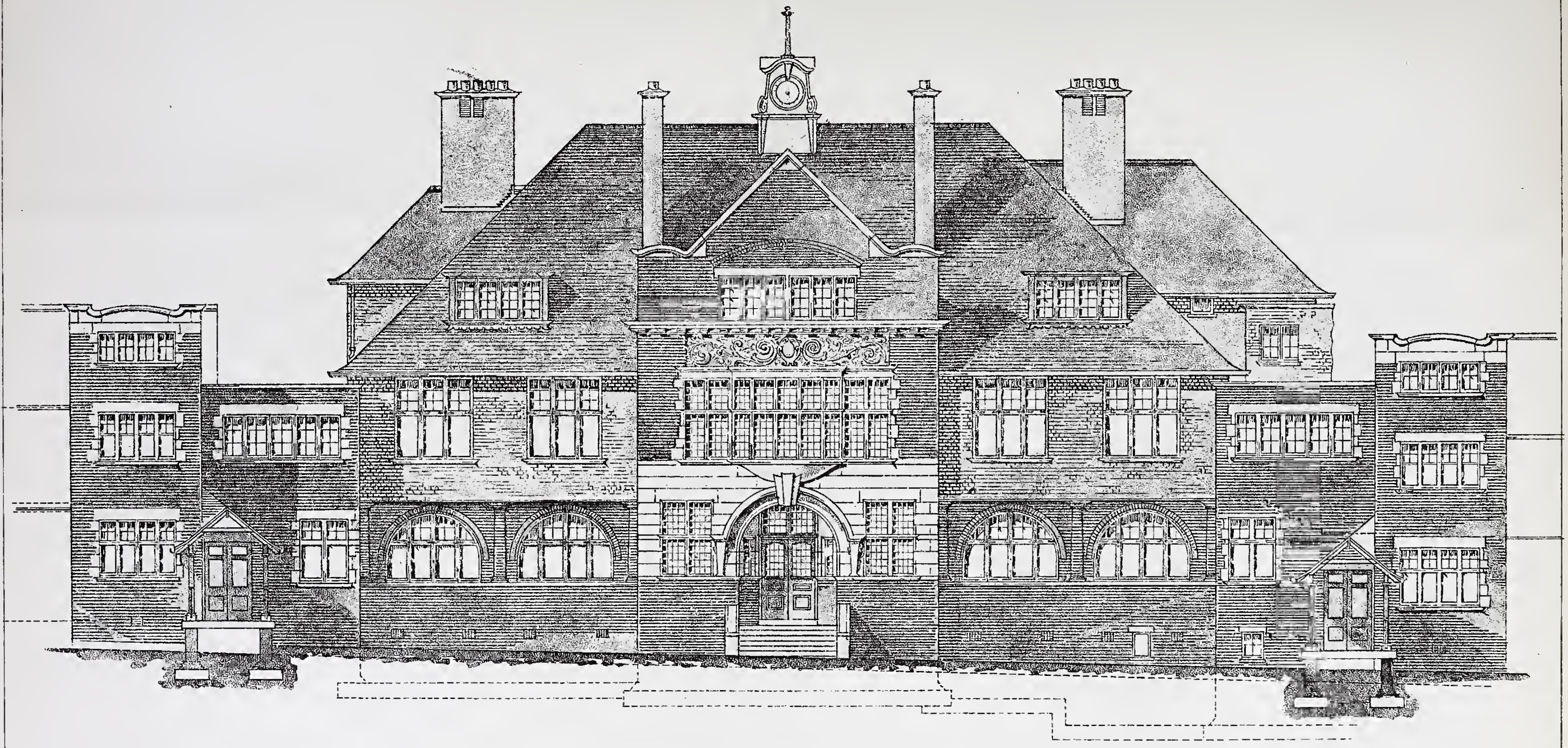
In Germany, steam heating is the rule, but steam, as I have shown in many a paper, is not the best for radiators. The best medium for heating is hot water, and this I always use.

The institution has its laundry, boiler and engine-houses, laboratory, post-mortem room, mortuary, &c. It will be lighted by electricity generated on the premises, and electric motive power will be used in the laundry. We are using semi-marine boilers, and a battery of accumulators so as to save night labour.

Hydrants and fire appliances and alarms will be fitted throughout as well as telephones.

The site is an excellent one of twenty acres, standing high in a forest of firs containing many beautiful trees. With Mr. Milner's assistance it will doubtless be made into a beautiful place, where, in the midst of gardens and trees and leafy walks, our sanatorium, flooded by sunshine, will, we hope, under God's providence, become a restorer of health and a college of hygiene far-reaching in its value.

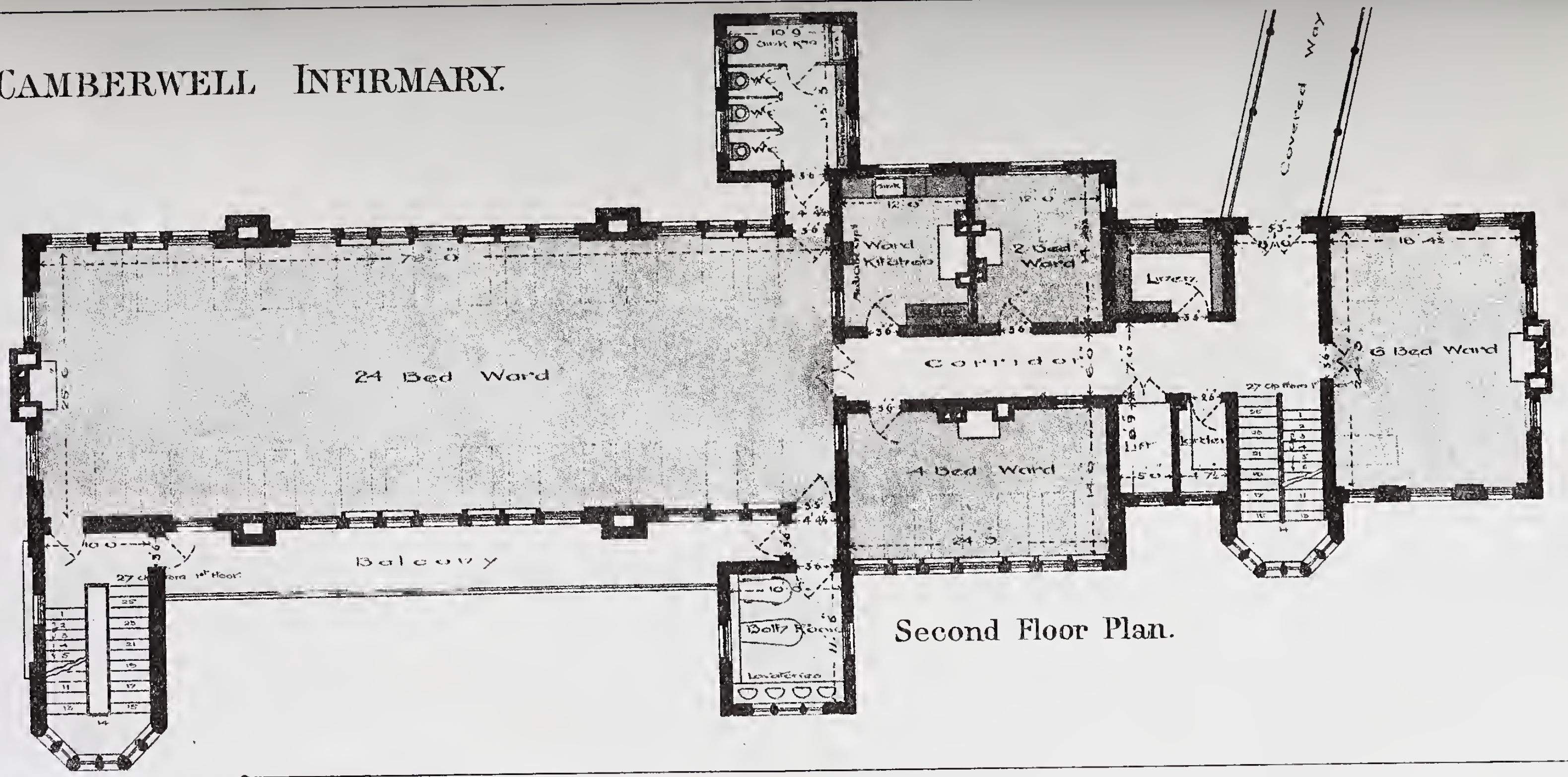
FRIMLEY SANATORIUM.



North Elevation.

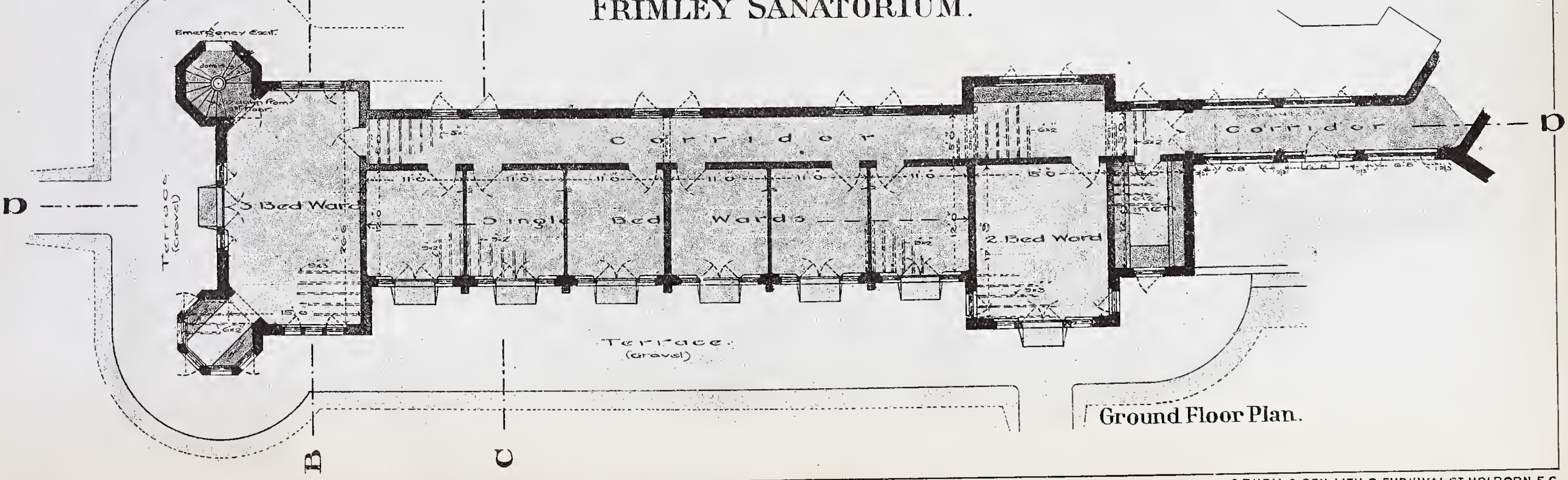
C.F.KELL & SON, LITH

CAMBERWELL INFIRMARY.



Second Floor Plan.

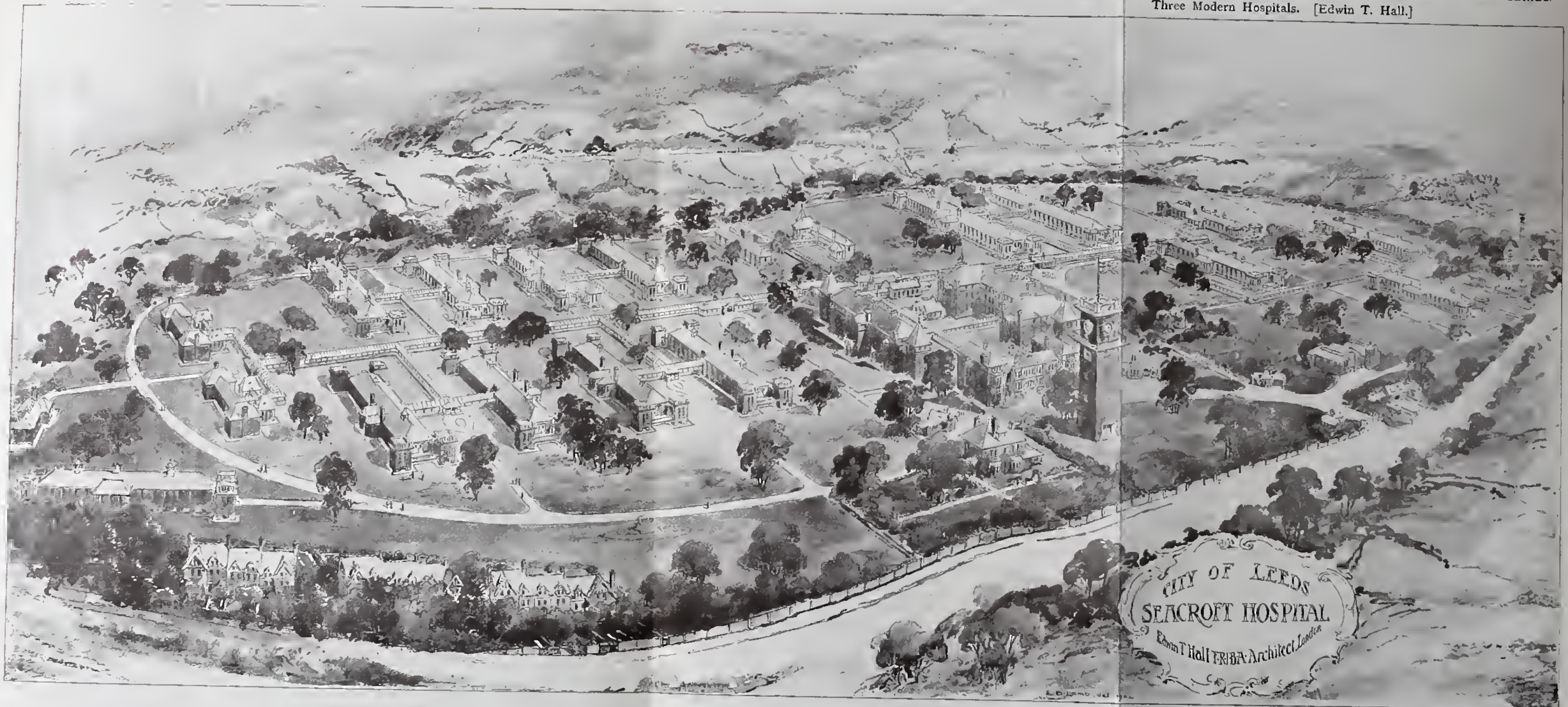
FRIMLEY SANATORIUM.



Ground Floor Plan.

C.F. KELL & SON, LITH. 8, FURNIVAL ST HOLBORN, E.C.

Three Modern Hospitals. [Edwin T. Hall.]



C.F.KELL & SON, LITH.

CAMBERWELL INFIRMARY.

Lastly, I come to Camberwell Infirmary, which, although technically a parish infirmary, is, owing to its position, really a general hospital dealing with a large number of accident and acute cases of all kinds, but it has no general medical school. The nearest general hospital is Guy's, and that is too far away for the great district stretching miles away to the south.

The infirmary previously existing in Havil Street consisted of one H-shaped building, with basement rooms, and one circular pavilion. These I am altering and modernising to form part of the larger institution which the Guardians instructed me to design. This is now practically completed. It consists of twenty-one buildings standing on a site of four and a half acres, practically surrounded by roads, and all buildings are connected by glass-covered ways and subways.

It accommodates 800 patients, has a resident staff of five doctors, while the other officials, nurses, and servants number about 160.

It is built of fire-resisting material, and special provision is made for escape. It contains a fully equipped operating theatre with recovery room attached; an electric treatment room with all modern appliances. It is electrically lighted, has electric lifts of special labour-saving type, laundry motors, electric ventilation, and a heating scheme on a system only existing in one other institution in London, erected under me a year or two ago.

My clients and their medical superintendent, Dr. Keats, have desired to make the infirmary up to date in every particular.

The site faces Brunswick Square, which is a well-wooded open space recently acquired for the public. It is quiet, and yet close to the main highway from Camberwell to New Cross. The block plan is as follows: In the centre of the west front is the administration block, with a pavilion north and south of it. To the east of the administration building is a quadrangle, having on the east side the female staff home, and north and south two other pavilions; to the north-east lies the old pavilion, now divided into three parts. To the east is a circular pavilion, its conical roof surmounted by a turret forming a feature of interest in the general composition. To the south-east are the kitchen buildings, the stores, and men-servants' quarters. Further south the laundry, engine, and boiler houses, the mortuary and ambulance station. All buildings may be reached by the private road on the outside and by covered ways on the inside. The principal buildings are of red brick and Portland stone, the main front forming a flat crescent. Greatly to my regret we have had to cut down many fine trees.

The entrance is in the centre, through a one-storied lodge, flanked by two pairs of gates, and, across a drive, to the administration building. Opening from the entrance-hall of this building are the business rooms of all the chief officers. The north wing forms the residence of the medical superintendent, the south wing that of the matron and sisters. The first floor of the centre contains the residences of the assistant medical officers, the committee room, &c.

Through the entrance hall and across the covered way are the receiving and examination rooms, and near them separation wards for infectious cases pending their removal.

Between the administration block and the south-east pavilion provision is made for an ambulance to approach the covered way, with its floor on the level of the corridor, so that a patient may be transferred without pain or inconvenience.

The new pavilions, it will be seen, are axially north and south. The pavilion to the north—which I may take as typical of all, although they differ in detail—consists of three main stories and a fourth one over part of the area. It has at the home end a wide staircase, with walls of glazed brick from bottom to top. At the other end it has a secondary or escape staircase, extending from the flat roof to the road, in what is practically a separate tower. To my mind a high building should have its escape staircases enclosed by walls, because I fear it would be found that sick and nervous patients would experience great difficulty in descending an open iron staircase of many flights. There are three exits from the building.

On each floor there is a ward of twenty-four beds, with windows on three sides, and other wards of six, four, and two beds respectively, affording opportunity for great classification. There is a ward kitchen. This and the corridors have also all their walls of glazed brick. There are other necessary offices and two sanitary towers—one for baths, one for closets, &c. These I have placed near the centre of the block, so that patients from the smaller wards may not have so far to go as if the towers were at the extreme ends. In some of the pavilions there are separate bath-rooms and closets attached to the six-bed wards used for special diseases. It will be seen that the twenty-four-, two-, and four-bed wards are open to supervision from the ward kitchen and from each other. All are well lighted, and every window opens. I have only one fireplace of faïence at the end of each ward, for cheerfulness, the heating proper being by hot water. The walls of all parts are painted in soft colours. All wards have polished teak floors, the kitchens terrazzo floors.

On every floor a balcony the whole length of the large ward faces west, and is sheltered from all cold and flanking winds.

I would draw special attention to the large ward of the top floor. This has been specially designed for consumptive patients. Practically the whole of the enclosures on three sides consist of opening windows, for open-air treatment, and above is a flat roof, on which patients may spend all the day with something of interest to see in the panorama stretching for miles across London. Three of the pavilions are so designed. I am not aware of any general hospital in London or other large town which has this particular accommodation for consumptive patients, but we hope, by thus bringing open-air treatment to the doors of the poor, we may help the crusade against this disease. The day-rooms for this and the other pavilion to the east are in the centre of the connecting-bridge. These rooms have windows on all sides.

All pavilions have electric lifts capable of taking beds of full length. These are so designed that no special attendant is necessary. By pressing a button the lift comes to the required floor, and inside, of course, it can be made to stop when required by pressing another button.

We have bed-pan racks for keeping pans warm, of special design.

The children's pavilion is four-storied, and contains wards of one, two, four, and eight beds, providing accommodation for eighty-eight patients, with eight bath-rooms and sanitary appliances for boys and girls respectively in towers at the two ends. We have two main staircases and a bed-lift; a kitchen, linen room, &c., on each floor.

The children's wards have wide balconies on each floor, capable of taking beds if desired. There are four exits from this building.

One of the greatest modern improvements in hospitals is the superior accommodation now given to the staff. In this connection I show the homes at the Brompton Consumption Hospital and at St. George's Infirmary.* The female staff home at Camberwell, of which a plan is shown,* is situated in the central quadrangle, with a pleasant garden attached. It will be seen we have several large rooms for dining, recreation, writing, &c., for nurses and servants. Each of the staff has a separate bedroom warmed by hot water, with an inlet and outlet ventilator. There are 140 rooms in the building.

The ventilation, *i.e.* the continued circulation of air, is ensured by an extraction flue from each room, connected to main trunk shafts or conduits over the central corridor, at the end of each being an electrically driven fan. The trunk conduit is equal in area to all the sub-

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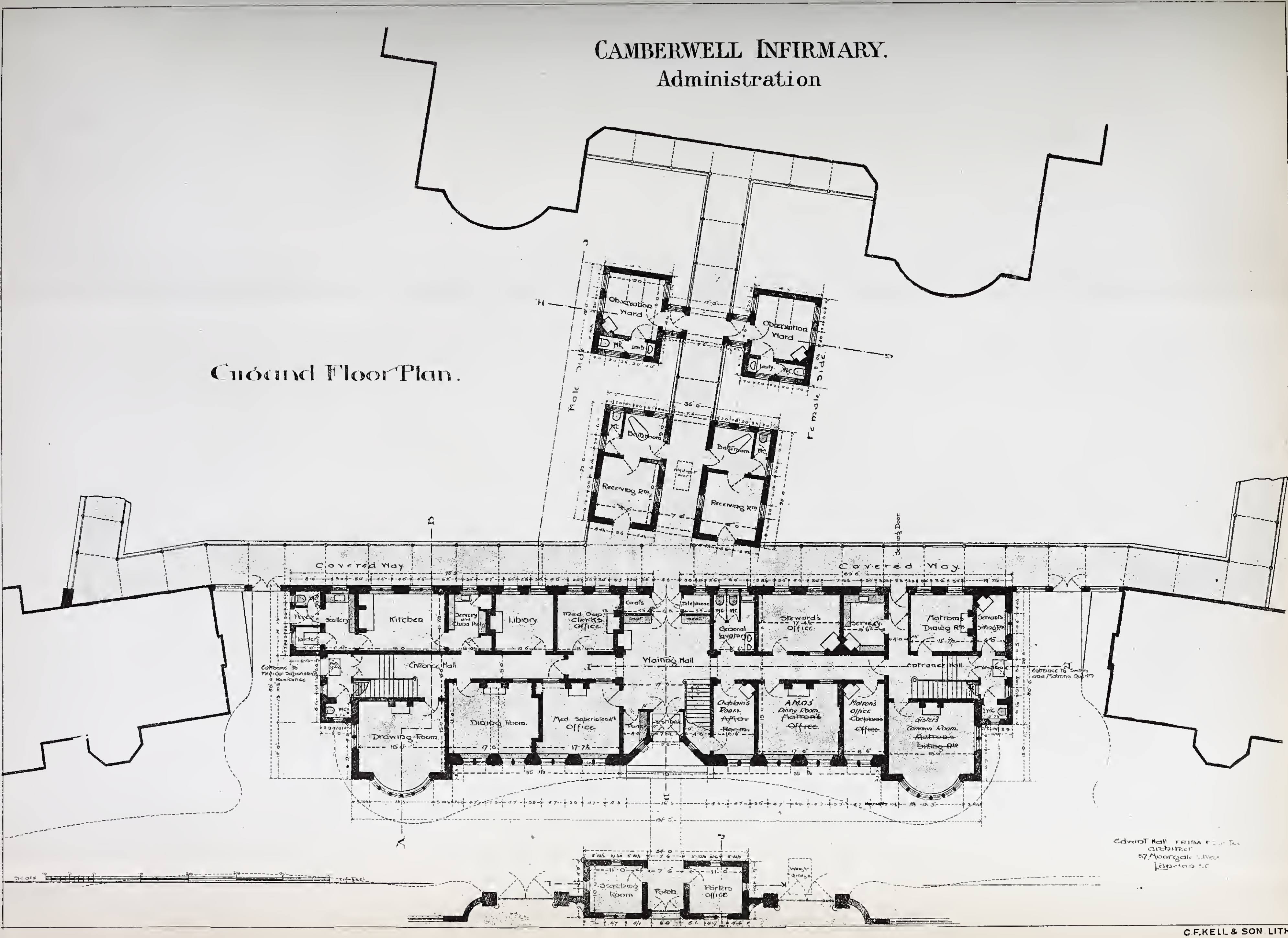
* The illustrations consisted of twenty-five lantern slides shown during the reading of the Paper, and of some seventy sheets of working and detail drawings of the buildings under discussion.—Ed.

CAMBERWELL INFIRMARY.
Administration



C.F.KELL & SON. LITH.

sidiary flues, and by an adjustable shutter in each of the latter the velocity of the up-current can be regulated.

All sanitary apparatus—baths, closets, and lavatories—is concentrated at the end of the corridors. There are three staircases and a service lift. The Home is in charge of a sister or assistant matron. There are open fires only in the sitting-rooms, our aim having been to minimise service and to create as little smoke as possible—a point which the Smoke Abatement Society will appreciate.

The kitchen block is one of some interest in a large place. Here the kitchen is 50 by 30, and 25 feet high, lighted by clerestory windows all round, by other windows at the lower level, and by a lantern the whole length. The walls of this and the scullery are entirely lined with glazed bricks; the floors are of terrazzo. Across the whole west end are serving windows, outside which in a recessed bay are ranged the trolleys for service to all parts. The plant consists not only of roasting-ovens, fish-friers, grills, steamers for fish and vegetables, and boilers for soup, beef-tea, &c., but we have tea-infusers, milk-sterilisers, meat-mincers, potato-peelers, and other modern appliances. Attached to the kitchen are dining-rooms for all servants and other employés, with their serving-rooms opening from the kitchen. A range of larders is outside.

Adjacent to this block is the steward's stores and the Home of the resident men-servants.

To the south are *the engine and heating rooms, smithy, shops, boiler-house and laundries* for patients and staff, the most costly block of the whole.

The engines consist of a generating plant for electricity, supplying all motive power as well as light. With the view to reducing vibration, I have placed the heavy concrete beds of the engines on a cushion of sand in a reservoir of concrete. Otherwise they are in a tank, with an air space 9 inches wide between them and its walls.

The heating is a special feature, which may be of interest, as it is quite novel. Instead of the usual system of conveying live steam to calorifiers placed under every building, or the practice of placing a furnace in each, our system consists in placing only three calorifiers under the immediate eye of the engineer. These are heated by exhaust steam from engines, &c., and from them water is pumped all over the institution for heating and domestic hot-water supplies. We have two ring mains in reverse directions for each service, and by this means we can never be without heat or hot water, even if we have a breakdown on any main. In every building, moreover, we have two or three separate circulations, so that no part can be left without some heat, no matter what may happen. The pipes are in subways high enough to walk in, all lighted by electricity and cross-ventilated at frequent intervals. The advantages of one heating station are obvious.

The boilers are four in number and are mounted with duplicate steam ranges.

The laundries are both arranged so that linen received soiled at one end passes through, and out clean at the other. The machinery is driven by a 45 horse-power motor. Electric fans remove all steam and polluted air. The drying is by hot blast. The old system of drying by coils of hot pipes in the closets is obsolete. This was a tedious process, and linen so dried never felt or looked clean. The open chambers which have been constructed in some places are fitted with clothes-lines, and hot air at a considerable velocity is driven through; but the objection to this system is that the chamber has to be filled when it is relatively cold, and after the drying process the attendants must wait until it is again cool enough to enter. In order, therefore, to get anything like continuous drying two chambers are necessary, one drying while the other is cooling, and these take up a large space. By the system of drying-horses and the hot blast each horse can be loaded in rotation. By the time the attendant has loaded the last one, the goods at the other end are dry and ready for removal, when the horse can be again loaded, and so on. I need not detain you by further descriptions of the many minor departments.

In now bringing my Paper to a close I trust I have been able to show that in hospital work there is much to interest the architect. In addition to the general design and detailing of not one but dozens of buildings of diverse purpose, to their grouping and coordination so that each may take its proper place among the whole, one has to give special consideration to the medical requirements and hygienic conditions; to aëration and ventilation; to the design and organisation of the services for heating and artificial lighting; for telephonic and other means of intercommunication; for fire extinguishing; for transport and commissariat. In these institutions we realise that even Vitruvius' list did not exhaust the many demands made upon an architect.

Unremitting attention is necessary to deal with so much of detail, often not alluring in itself; but with enthusiasm the driest bones may be made to live, and to the strenuous man difficulties and new problems are but a spur to greater effort, an added zest to all emprise.

DISCUSSION OF MR. HALL'S PAPER.

The President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair.

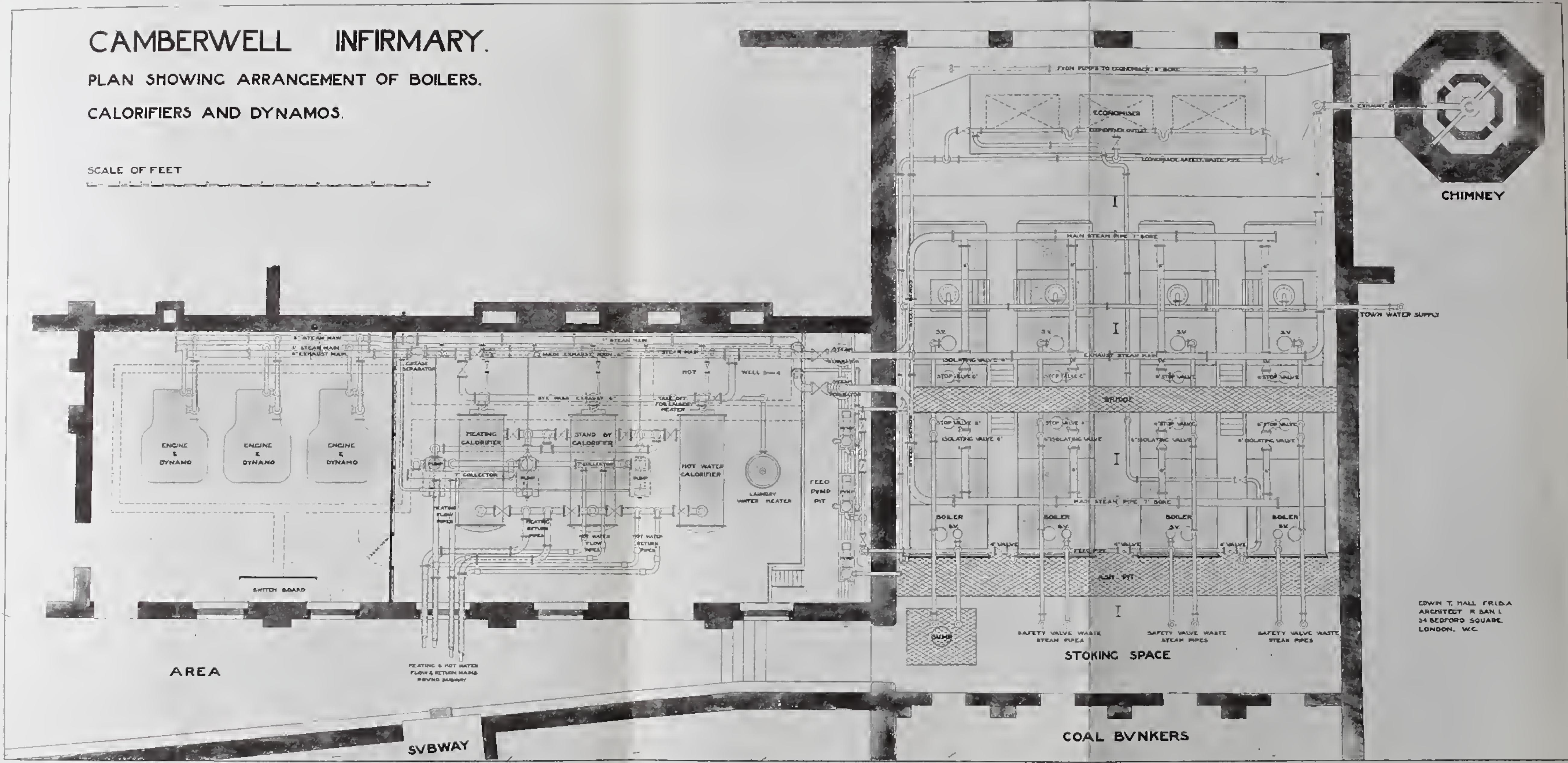
Mr. HUGH STANNUS [*F.*] moved that the thanks of the Institute be given to Mr. Hall for his exceedingly valuable Paper, to which they had all listened with so much interest and attention. This was essentially an age of hospitals; and anyone who would condense or draw to a focus all the information to be gathered on such a subject deserved well, not only of posterity, but of present-day architects who had the benefit of his work. The manner in which Mr. Hall had classified these buildings enabled him to deal with them in a very masterly manner; they would all enjoy reading his Paper, and no doubt, too, those whose practice lay in this class of work would derive very great benefit from it. During his membership of the Institute he had heard very able Papers read in that room on various branches of the specialised work that architects had sometimes to practise: they had heard Papers on Breweries, on School Buildings, on Colleges, on Laboratories, on Libraries, on Public Baths, and now they had a Paper on Hospitals. These Papers, along with the Reports of their Godwin Bursars, formed an exceedingly valuable corpus of information for all who had to practise in any of these departments. The attendance that evening must have been very gratifying to Mr. Hall; it must have shown him that not only were the members desirous of paying attention to the second half of the Institute motto, *Decori Urbium*, but that they were also desirous of making something *Usui Civium*. The numerous attendance that evening was a compliment, not only to the Paper which had been brought before them, but also to the reader himself, as they had every reason to expect from him a thoroughly clear, practical, and systematic treatment of the subject.

Mr. R. F. CHISHOLM [*F.*] asked if Mr. Hall would tell them the cost of these hospitals.

Mr. THOMAS BLASHILL [*F.*], who rose at the invitation of the President, said that his qualifications for speaking on the subject were perhaps questionable. It was true that a good many years ago, when the pavilion system first became recognised as the proper system for the carrying out of a hospital, he was honoured by an invitation to compete with a limited number for such a building—and for the credit of the profession, and those concerned in it, he might add that each of the competitors was awarded a fair premium. He was not able now to say why—or at any rate he would not suggest the number of reasons which the man who failed to get the first prize might give!—but he did not get the erection of the hospital. He did, however, get this: it led him to see, he believed, every hospital of the kind that had been built up to that date, and to take a great interest in the subject, and he stored his mind with a good deal of useful information. People who went in for competitions, if they got nothing else, at all events got that. It was a tribute to the original authors of the idea of the pavilion system that it should have undergone so very few modifications. Since the time he had spoken of, which was more than thirty years ago, there was very little in the general arrangement which was new. The improvements they had got and the progress they had made were by the intense study of details, and to his mind what one saw now in a modern hospital, and what they had heard from Mr. Hall's admirable description, showed what could be done by intense study of details. He could not add to the information Mr. Hall had given them, but, in obedience to the

CAMBERWELL INFIRMARY.

PLAN SHOWING ARRANGEMENT OF BOILERS. CALORIFIERS AND DYNAMOS.



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President's call, he felt he might say so much; and he desired to second most heartily the very cordial vote of thanks he was sure they would pass to Mr. Hall for his admirable Paper.

Mr. W. G. WILSON [*A.*] said he noticed that in the plan of the consumptive hospital the system of radiating the blocks from the centre had been adopted, and he should be glad if Mr. Hall would tell them what was the advantage of this system over that of having the blocks in échelon. If one particular aspect—say the south or south-west—was the best, something was sacrificed by setting the block off a different angle. Although they got closer to the administrative block by having the arms radiating, did they not lose more than they gained by sacrificing the aspect?

Mr. R. J. ANGEL, Assoc.M.Inst.C.E. [*A.*], said that when the plans of an infectious diseases hospital with which he had something to do were first sent to the Local Government Board for approval, that authority objected to covered corridors between the wards. These corridors consisted simply of a roof upon columns; but a covered corridor of any kind, although it was open at the sides, was objected to. He understood the lecturer to say that his wards were connected by covered corridors, and he should like to know whether they were approved by the Local Government Board.

Mr. W. B. HOPKINS [*A.*] asked Mr. Hall whether with wards facing, one to the north and the other to the south, the balcony facing to the north was of much use, and whether the later plan at Camberwell, with the balcony on one side nicely sheltered, was a good deal more used; and also whether the position of the sanitary towers in that plan was not very much superior. He should also like to ask about the covering of the floors. In a visit he paid to the Park Hospital about a year and a half ago he found that the teak floors had shrunk a good deal, and that there were a great many cracks between the boards. The medical superintendent also complained that he was constantly having to treat children with bruised heads, because they slipped and fell about on the polished boards. The superintendent, Dr. Birdwood, said that he thought plain deal boards were better than polished teak, if kept clean, and were not so slippery. Dr. Birdwood also thought it was quite possible that cork carpet or linoleum would make a better floor than anything else. He should like to hear Mr. Hall's experience on these points.

Mr. W. HILTON NASH [*F.*] said he would like to support the vote of thanks to Mr. Hall. He had very few words to say, but when one saw such a beautiful building as that Sanatorium at Frimley it almost made one wish that one had a chance of spending a few weeks in it! Would Mr. Hall tell them what soil he thought was the best for a hospital to be built upon? In the early part of his Paper Mr. Hall said that in his opinion gravel was not a good soil; and he was inclined to think so too. He thought that clay, if well drained, was the best soil for an infectious hospital, because it did not absorb the germs. It seemed to him that Mr. Hall adopted in some of his designs a scheme that was used in the Lariboissière Hospital in Paris, and which he thought was first used in St. Thomas's Hospital in London, that is, having ventilation across the wards, and building in pavilions. It was a curious thing that when St. Thomas's Hospital was being moved from the site in St. Thomas's Street near London Bridge to the new site on the river they used the old Surrey Gardens as a temporary hospital, and while they were in the latter place there were very few cases of pyæmia, and wounds and operations healed more quickly than in any permanent building. It seemed to him they might build their hospitals so well that the walls would be too thick, and therefore there would be no ventilation, or imperceptible air passing through the walls. They all knew that a great amount of air passed through a thin wall, and the question therefore might be considered whether thin walls might not be used with advantage for hospitals.

Mr. J. OSBORNE SMITH [*F.*] said he thought from one point of view that this was the most interesting Paper they had ever had in that room. What they had heard about fresh air, sunlight, aspect, separation from the ground air in the pavilion, and other matters were points which might be welcomed in connection with other buildings besides hospitals. Mr. Hall was very emphatic on those points, and seemed thoroughly impressed with the necessity for currents of air passing across the building, about the building, and under the building. He remembered once looking into the ward of a hospital: they were told that air was coming into the room—in which there were twenty-four beds, he believed—but the only sign that air was coming in was that the window-blinds were quite black; the windows were all fast, and the air was being pumped in. That seemed to him a most unnatural way of ventilating a hospital, and it had been delightful to listen to Mr. Hall talking about the way he kept air freely circulating, treating the patients like human beings that wanted fresh air, instead of being cooped up in buildings where the air was passed along in dusty conduits for them to breathe. It was a mistake treating such buildings as these on the Plenum system, and he was particularly glad that Mr. Hall had emphasised that point.

The PRESIDENT said that they would all agree that they owed a debt of gratitude to Mr. Hall for the great trouble he had taken in preparing this Paper, and for bringing his actual working drawings for them to see. He had given them out of his knowledge and experience what he had gained with infinite trouble and pains, and in so doing he had placed them under a great obligation. He (the President) was not especially an expert in hospitals, though it had fallen to his lot from time to time to erect one. The question of the isolation of a hospital for a town was one that was constantly occurring in London, and had lately been much under discussion in the case of one of our most famous hospitals. How far it was wise to remove them out of the town, and to take them far away from the cases they would have to serve, was perhaps open to question. With regard to aëration of the wards, they must all agree that the more complete the circulation of air in and about every ward, the better; but he ventured to think that sometimes this aëration had been carried to an extreme, and that, like an accordion, the hospital had been gradually drawn out further and further until, in one or two well-known cases, it took the matron perhaps a couple of hours to get from one end of the building to the other, and wrung from her complaints of the fatigue she suffered in traversing such long distances. That seemed to have resulted in the accordion being suddenly closed up, as at Belfast, where Mr. Henman, in the most ingenious, novel, and bold way, had endeavoured to get over the difficulty. They must wish him all success in his effort. But they would agree that in all these cases, and with all their care and pains, the only thing that settled whether these methods were good or bad was the actual experience when the building came to be used. At the same time it was necessary that experiments should be made, and everybody was under an obligation to those who were bold enough to make these experiments. With regard to the open space under the wards, in order to secure this aëration not only round them, but over and under them, he should like to know whether Mr. Hall was quite convinced that that was the best thing to do. Like everything else, it had its advantages and its disadvantages; and one disadvantage was that the space under the ward was apt to become a dust-heap. Mr. Hall, he supposed, protected those arches and prevented undesirable things being put under them. But he (the President) once built a hospital on arches in that way, and visiting it a year or two after he found that they had put all the old beds and mattresses and lumber of that kind underneath, and it had become a very disagreeable place. That was one of the dangers of the system. Mr. Nash had mentioned the thickness of the walls, and he should like to hear what Mr. Hall had to say upon that, and whether he used hollow walls or solid piers. Of course the window space in the sides of the wards was so large that the wall became nothing but piers, and therefore he was probably obliged to build them solid. Would Mr. Hall also tell them what area of glass in proportion to the floor area he found best for these wards? This was a very important question: what might be advisable from a theoretical standpoint was often found to be rather excessive from the patients' point of view; the light sometimes being almost more than they could bear. He was very interested in the position of the closet blocks Mr. Hall had used at Camberwell. He had often thought of it, but had never ventured to adopt the closet blocks at the roots of the wards, so that they might serve the smaller wards as well as the larger one. It seemed a most excellent plan, saving as it did, too, the necessity of carrying the chamber vessels right through the large wards to the farther end. But there was one little difficulty he had always seen, and which he did not think Mr. Hall had quite overcome, namely, how to disconnect those sanitary blocks from the wards. So far as he gathered from the plans shown, the passage which led from the ward to the closet block was blocked on the one side. There was no complete aëration through it owing to the projection of the single wards. He had no doubt there was some way out of it, but it was not apparent on the plan. The enclosed escape staircases seemed another case where it was a matter of compromise. Mr. Hall thought that they ought to be enclosed, so that the patients could be taken down more comfortably. The disadvantage of that was that they got a great projecting building standing out at right angles to the ward, and a shade thrown over the ward and the windows. There was a cold and stagnant corner for air that prevented the aëration of the ward. He could not think that a patient in danger of being burnt alive would have much hesitation in going down an open iron staircase.

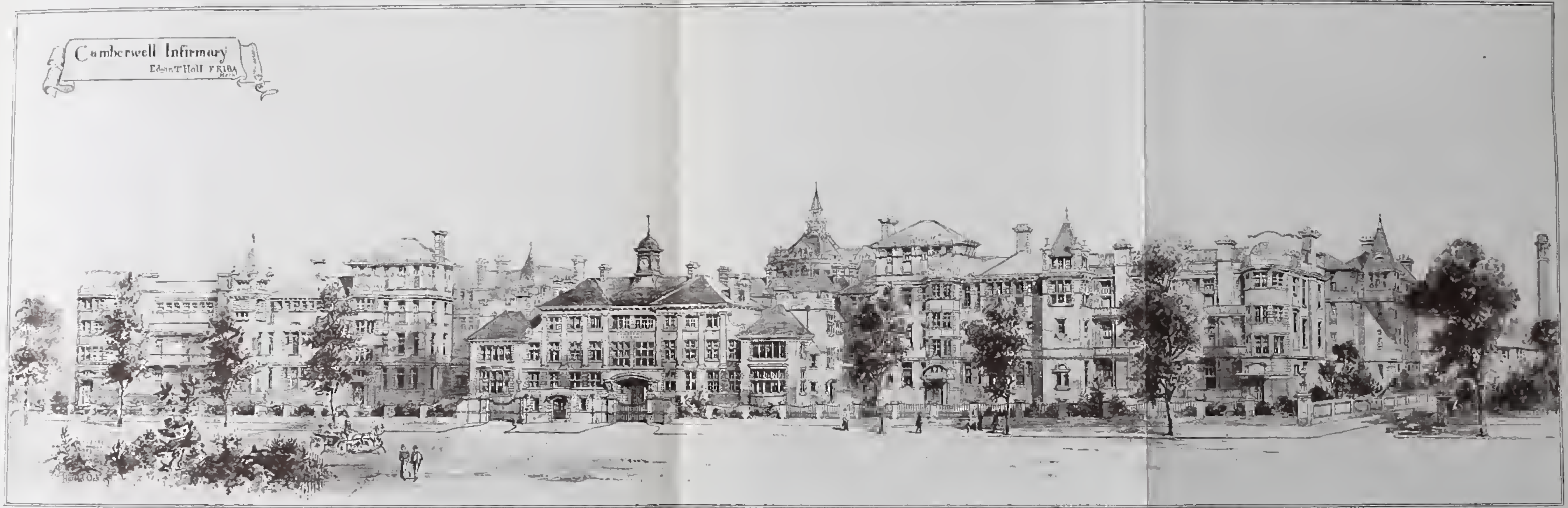
[Mr. HALL: A patient of seventy years of age, say.]

The PRESIDENT: If patients could get down at all, they could surely get down an open iron staircase as well as any other; and it seemed to him that those wards with the projecting staircase and with the projecting closet block were rather inclined to stop the circulation of air round the ward, and also to some extent to cut off the sun. Again, he did not quite understand the circulation of the hot water by pumping. He had had something to do with heating large separated blocks from one centre, and had taken steam to each block, in what Mr. Hall seemed to think the old-fashioned way, to a calorifier, and converted it into hot water at each block, because it seemed easier to take the steam to the block than to take the water circulation. In Mr. Hall's scheme the whole of his buildings seemed to be dependent upon the one calorifier.

[Mr. HALL: There is a duplicate.]

The PRESIDENT in conclusion said that

Three Modern Hospitals. [Edwin T. Hall.]


Camberwell Infirmary
Edwin T Hall F.R.I.B.A. Archt

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he had not made these remarks at all in the way of criticism of the Paper, which he did not profess to be able to do; but having got Mr. Hall on the subject, and he having made it a speciality of his own, he thought it was only his duty as their Chairman to extract every ounce of information that he possibly could! He had the greatest possible pleasure in putting the vote of thanks proposed for this most excellent Paper.

Mr. HALL, in responding, said it was a great gratification to him to know that the Meeting had found his Paper of interest. He would endeavour to answer, so far as he possibly could, the various questions put to him, and to give that last ounce of information that the President was anxious to extract! Taking the questions *seriatim*: one speaker had asked a terrible question—viz. what hospitals cost. He was rather disposed to think he had better not answer it. Hospitals were the most expensive buildings in the whole world, if they gave attention to every little detail. He had heard of an infectious diseases hospital not very long ago being built for £250 a bed. He could only say he was perfectly certain that that hospital was not built with all the modern detail now insisted on, because his experience was that a big infectious diseases hospital (he was distinguishing that from other hospitals) could not be built for less than something like £450 to £650 a bed. That was the very least; in some places they had cost a good deal more than that. An infectious diseases hospital had twice, or two and a half times, and, in some cases, three times the cubic space per bed of a general hospital, and that must be borne in mind in comparing the cost of hospitals. As to the question of radiation of plan and of aspect: Aspect, again, was relative to the particular disease. In the case of infectious diseases, the idea is to get through currents of air driven, so that foulness may be got away instantly; and one wants the very maximum of sunlight, because the people are confined to their beds. In the case of a sanatorium for consumption, however, not one person in 30 is confined to bed, and the doctors, and pretty well all the German experts, say that the best aspect for consumptive treatment is the south or south-east or south-west; in other words, to get the hottest and best sun of the day. He was asked about that radiating plan of Frimley. If they looked at it, every room of it faced either south or south-south-east or south-south-west. Each building was parallel with the opposite wing. All the northern sides were occupied by corridors simply, and there were through currents of air, of course; doors and fanlights up at the ceiling, and windows on the other side of the corridor beyond those. With regard to the covered way, he was surprised to hear that the Local Government Board ever objected to a plan with a covered way. He certainly knew of no modern hospital built under the Local Government Board which had not a covered way. He had had to pass through the Local Government Board with many of his plans, and had never had the smallest objection raised to the covered corridor; if they had raised an objection, he should have fought it tooth and nail. It was a most barbarous thing to suggest that the staff must walk for a quarter of a mile in the open during sleet and snow. They got over it in Germany, as one of their doctors had explained to him, by going down into the subway under the road and getting across that way in bad weather. Another speaker had asked whether the north balcony in the fever ward was not objectionable. No, because sometimes in the great heat of summer it was useful to put patients on the north side to get them sheltered from the scorching sun. The balcony was not used when the weather was not suitable. Camberwell was a general hospital, not an infectious diseases hospital, and they had very different cases to deal with. A hospital built essentially to deal with infection was built on different lines. But in all hospitals aëration, and plentiful aëration, was wanted. That brought him to a point raised by the President—viz. as to having an open basement beneath the pavilions. He did not think they were necessary, except in an infectious diseases hospital, where they had scarlet fever, small-pox, and such diseases. There they had this eminently practical advantage, that all the pipes and everything that fed the pavilion were in the open air, so that the workman, when he came to repair anything, did not go into the midst of infection to carry it home perhaps to his wife and family; he worked in the open air beneath. He had never had the misfortune to find his subways filled with old beds and packing-cases. It would be seen by his plan that his basements were level with the floor or the ground, and were paved all over. They were five or six feet high, and were simply a series of open arches. He could not imagine, except through some gross neglect of the medical superintendent, their ever being abused. With regard to a teak floor, he was very much surprised to hear that a doctor had said that a deal floor was as good as teak. Everybody knew that deal was very soft, and germs or anything could readily get into it. The mere passage of trolleys over it would cut it up into snags and ridges. The reason why teak was used was because it was the hardest known wood in the world, and the most lasting. The wax polishing was to keep it clean and make it free from the possibility of receiving poisonous germs. As to teak floors opening, he was afraid all wood floors opened sometimes, and it was very difficult to prevent. He could, however, say with confidence that if they asked nineteen out of twenty doctors what floor they preferred they would say a polished teak floor. Perhaps the twentieth would say he preferred a terrazzo floor. In Germany they had terrazzo floors, and the mode of heating their wards was by flues under those terrazzo floors, so that the nurses were walking on hot bricks all the day, and, needless to say, suffered a great deal in their feet. As regards Mr. Hilton Nash's question as to the best soil for a hospital, he had said in his Paper that low-lying gravel was bad. If they could imagine a basin of low-lying gravel and a building at the bottom of it, they could see that all the subsoil water ran down and flooded the gravel with all kinds of impurities. The heat would force up the ground air in the gravel, and ground air was very poisonous. But if they were on the top of a hill of gravel they were safe. He thought that green-sand formation was the best they could get. But, of course, they must build their hospital on the soil of the district; and if it was clay for 100 miles round the city, they must of necessity put their hospital on clay. So long as the land was well drained it was all right. But the objection to clay was that it was cold, and water would not go down through it; it ran off it; and if they got a great deal of continuous water, unless the site was very precipitous, they necessarily got a damp and cold soil. With regard to the Plenum system, he thought that system very valuable where no fresh air could be got in; but where a current of fresh air was available it seemed madness to go to the expense of pumping in air through flues which necessarily became ultimately foul. With reference to thin walls, Mr. Hilton Nash mentioned that air came through thin walls, and that therefore it was beneficial. So it was if it was pure. But a building was not usually erected so that the air to feed its rooms should come in through the walls; some other provision was generally made. Air can be got through walls of almost any thickness with certain stones. Some experiments were made years ago, and the results were recorded in the text-books. But if fresh air can be made to come in, in the way it is designed to come, and to be cleaned as it comes in, it must be better than letting it come in through the wall. Again, as the President pointed out, where there are window areas there must be solid walls to carry the weight; so that in effect they do build solid walls. He personally never built a hollow wall unless he could not help doing so. The President, he thought, had rather misunderstood him when he suggested that general hospitals should be moved out into the country. He said in his Paper that infectious diseases hospitals should go into the country, because they were such a great source of danger to the neighbourhood; but he also said distinctly that general hospitals must of necessity be where their *clientèle* was, in poor and populous districts where the accidents occurred. In respect of the area of windows, there again it differed in various hospitals. The area for an infectious diseases hospital was about one-fourth of the floor area generally; but for a consumptive sanatorium he would make the whole of one side of the room of glass if he could. Dr. Walthers, of Nordrach, had built his own house so that in the summer he could take out the whole of one wall and live in the open air, and merely put the side up in the winter season. With regard to the disconnection of the sanitary towers, sanitary towers should be disconnected by cross-ventilating corridors. If they looked at the plans of Frimley Hospital they would find that they were absolutely disconnected. In Camberwell he had not absolutely disconnected them, because that was not an infectious diseases hospital, but was for general illnesses and acute cases. With reference to open staircases, he had known instances where people were too nervous to go down high open stairs. There was a danger of their falling, and therefore he had enclosed them. He had also another reason. By these enclosed staircases he was able to keep all the flanking winds from the balconies, so that the patients could sit there and bask in the sun and be sheltered from the flanking winds getting at the back of their necks. He thought that was a great boon to the patients. At Frimley he had projected the end of the pavilion for the same reason, so that the patients sitting on the terrace were sheltered from the flanking winds. With regard to pumping the water for the heating he would suggest that the system of having a calorifier in each building meant conveying live steam to it, and they had to pay for that live steam. By his system the exhaust steam was used; it was pumped up and cost nothing. That steam in the usual way would go to atmosphere, and he used it for heating. In a big institution, such as Camberwell, by using this exhaust steam the difference in maintenance per annum would be about £400. They saved that sum absolutely. They had duplicate calorifiers. It was common knowledge to everybody that in any institution where a steam boiler was used, it was only necessary to have two. If one broke down, the other was switched on; in the thousands of mills and factories all over the kingdom they never heard of one being stopped on account of the boiler breaking down. They had the same thing. If one of the calorifiers burst—and such a thing was practically impossible, for it was tested to perhaps double its working pressure; but if it did, they merely shut off the valves and opened the valves of the next one. In their scheme, also, they had two reserve mains. In the ordinary system of heating, if the steam-pipe leading to any of the calorifiers broke at a joint, every one broke down, and the whole of the building was absolutely without heat. This could not happen with their system, because they had reserve mains everywhere, and if one broke down, the others would go on just the same.

INCORP. 1837 1887

9, Conduit Street, London, W., *25th April* 1903.

CHRONICLE.

COMPETITIONS.

Stockton-on-Tees and Gillingham.

Representations have been made to the respective promoters of the Queen Victoria High School Competition, Stockton-on-Tees, and the Public Baths Competition, Gillingham, with regard to the unsatisfactory nature of the conditions.

The reply from Stockton-on-Tees is as follows: "I have your letter of the 4th inst., which I have discussed with some of the Governors; but the Conditions of Competition having been framed by an architect of great experience and to meet special circumstances, and unanimously approved by the Governors, they do not feel at liberty to depart from them."

The Clerk to the Gillingham Urban District Council, who were advised to appoint an assessor and pay their architect according to the R.I.B.A. Schedule of Charges, writes as follows: "I am instructed by the Council to acknowledge the receipt of your letter of the 6th inst., and to inform you that they consider the conditions they have issued do not need any revision. They will, apparently, be the means of causing a very large number of designs to be submitted." It is to be hoped that none of these designs will be by members of the Institute.

Excavations at Knossos.*

Mr. G. A. Macmillan, Treasurer of the Cretan Exploration Fund, has published the following telegram just to hand from Mr. Arthur Evans at Knossos:—"Important discoveries. West of north court of palace double flight of broad steps flanked by bastion leading down to paved area; apparently served as seats for spectators. Anticipation of theatre. Analogous to similar steps outside palace at Phæstos. In early building near, deposit of bronze basins, beautiful leaf and lily decoration, and bronze vase with reliefs. North-east of palace, house of fine construction running into hill-side, remains of two stories with three flights of stairs. On a landing stood tall painted jar with magnificent papyrus decoration partly in relief and unique in style. Great extension of works entailed by these various developments." This brief announcement, says Mr. Macmillan, makes it clear that the new season's work at Knossos will be at least as fruitful as that of the three previous years. It is clear also that the season's outlay has been greatly under-estimated. Setting aside £200, which has been earmarked for the excavations being carried on at Palaiokastro in Eastern Crete by the Director of the British School at Athens, it was hoped that about £1,300 would have sufficed for the completion of the work at Knossos. But not less than £2,000 will be required for this work alone, besides the deficit of more than £1,200 on the work of previous seasons. In response to previous appeals the Cretan Exploration Fund has received rather more than £1,500 for the present season's work. Of this only £1,300 are available for Knossos. To enable the explorer to carry on his splendid work without financial anxiety, the managers of the Cretan Exploration Fund desire to raise another £2,000.

The Campanile Bricks.

Cav. Giacomo Boni [*Hon. Corr. M.*], in a lecture at the History Congress at Rome, gave some interesting particulars of his examination of the remains of the fallen Campanile at Venice. Great numbers of the bricks were, it appears, roughly traced by the makers with all kinds of figures, sometimes with a number, sometimes with a private mark, and sometimes with letters. One brick, for instance, had the letters "DCI." impressed on it, evidently a sign that in the particular batch to which it belonged there were some thousand one hundred odd bricks. The shape of the bricks showed that they had been used for various purposes at a previous period. Some had been utilised for arches, some for fortifications, others for tops of walls. The most important feature about them, however, is that they are not Venetian but Roman bricks. This was deduced by Signor Boni from their general appearance, shape, and texture. The bricks, apparently, when being manufactured, were not manipulated like modern bricks and made from a mass of clay already stirred up and kneaded ready for use, but were formed from slices of the clay as it was found without its natural layers being disturbed. This process resulted in each individual brick being able to support a weight quite four times as great as that which can be borne by bricks of modern manufacture. One of the bricks, which are of the first century, had marks representing the impression of a horseshoe, thus conclusively proving that horseshoes were known to and used by the ancients. Another brick bore an impression of the tips of a man's fingers pressed quite deep into the clay. Only about one brick in every thousand bears this impression. Signor Boni assumed that this was a private mark, used once for every thousand or so of bricks that were baked by the manufacturer. Some of the bricks showed marks left by animals which had been allowed to touch the clay before it had been baked—one showing marks made by a large dog, one by a pig, one by a calf, three by a goat, and several by sea birds.

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* See Papers by Dr. Evans "The Minôan Palace of Knossos, Crete," Journal R.I.B.A. 20 Dec. 1902, p. 97; and Mr. Theodore Fyfe, "Painted Plaster Decoration at Knossos, with special reference to the Architectural Schemes," *ibid.* p. 107.

REVIEWS.

NOTRE-DAME, PARIS; MONT S. MICHEL.

Bell's Handbooks to Continental Churches. 8o. *Lond.* 1902. *Price* 2s. 6d. *each.* [*Messrs. George Bell & Sons, York Street, Covent Garden.*]

Notre-Dame de Paris. A Short History and Description of the Cathedral, with some Account of the Churches which preceded it. By Charles Hiatt.

A Short History and Description of the Church and Abbey of Mont S. Michel, with some Account of the Tower and Fortress. By H. T. L. Massé, M.A.

It is gratifying to find that the success achieved by Messrs. Bell's excellent series of handbooks has encouraged the publishers to extend their range to the Continent; and it may be taken as a hopeful sign of the times that a well-written and intelligent account of a famous building, and a not too technical description of its architecture can be appreciated by the travelling public.

Messrs. Bell & Sons are to be congratulated on securing the services of Mr. Charles Hiatt to deal with Notre-Dame de Paris, and he certainly has made excellent use of the ample sources of information at his disposal.

The reader is not confused by unnecessary controversial matter, and the author's criticisms are weighty and worthy of respect, as witness his remarks on Viollet-le-Duc's scheme of polychrome decoration and the much debated flèche, which the reader is enabled to compare with a most interesting view of the original on p. 44. Most architects will agree with Mr. Hiatt in his remarks on Mr. Charles Herbert Moore's assertion that the Romanesque apse "produces no imposing effect." Mr. Hiatt's views are so well worthy of attention that one almost wishes he had offered his opinion on Viollet-le-Duc's work in the east and west sides of the transepts, "intended to show us the arrangement which obtained throughout the church previous to the alterations which resulted from the fire in the thirteenth century." Some people may consider it less interesting than the work it replaced.

In comparing the shallow transepts with the longer proportions of those in the greater churches of England, the author seems to overlook the different manner in which the numerous altars were accommodated: in England, by affording a certain amount of eastern wall space, and in France, by side chapels in which the altars are not necessarily placed eastwards.

In dealing with the generally expressed disappointment at the first view of Notre-Dame, both inside and outside, Mr. Hiatt's ideas strike one as perfectly just, though the lack of any imposing flight of steps to the west front may be a possible explanation in the one case; and the author does not enlighten us as to the original level of the Place du Parvis, while he seems to miss the linking together of the façade by the great arcade, which stamps this west front as so great a conception; a point most ably dealt with by Professor Pite in a Paper read before the Architectural Association some years ago.

The over-restoration of the French *monuments historiques* does not escape Mr. Hiatt's well-merited criticism, though he deals with that at Notre-Dame most leniently: too much so, many will think.

In addition to the ample and excellent photographic illustrations, several reproductions of etchings by Méryon and Pennell are given, together with several interesting old views; and some results of Viollet-le-Duc's facile pen are laid under contribution. An excellent plan is included, though it is to be regretted that the vaulting and arcade lines have been omitted.

That a place of such surpassing interest as Mont S. Michel demands exceptional treatment in any handbook is a truism which Mr. Massé fully recognises; for, as he remarks in the preface, "it is unique." And to anyone who has taken a deeper interest in the visit to the famous Mount than that of the casual cheap-tripper, and on whom the glamour of its mediævalism has cast a sufficient spell to lead him to investigate the mass of literature relating thereto, this little work will prove a real boon. That Mr. Massé has done his work well cannot be denied; and he has contrived to condense in his 128 pages much useful and valuable information.

If this work serves no other useful purpose Mr. Massé deserves thanks for calling attention to the disastrous results of the so-called restoration, which is effacing the mediævalism of this world-famous place. The architect or the antiquary who has not kept touch with the place will be alarmed at the results as chronicled by Mr. Massé, and the prospect of further efforts in this direction are anything but re-assuring; and, coupled with the modernising of the town, will be the cause of keen regret. Mr. Massé has a good deal to say on this question, and though making full allowance for the outcome of necessary reparation and the valuable discoveries incidental to the works, is justly severe on the disastrous passion for reconstruction under the name of restoration, which ruins so many buildings unfortunately scheduled as *monuments historiques*. Not content with rebuilding the tower, it appears that the nave of the Abbey Church is not only to be totally reconstructed, but lengthened to its original seven bays, and the Merveille will not escape. The interior and exterior of the church choir have been undertaken—the cloister and charter room were entirely rebuilt from 1877 to 1881—and the refectory has received attention. A view of the cloister gives an idea of the modernising character of this work, and the effect of the glazed roof-tiles is deplorable. Mr. Massé wisely quotes some remarks of the Rev. J. L. Petit, from the preface to his *Architectural Studies in France*, which are worth repeating: "Occasionally repair may be necessary, both with a view to the stability of the fabric, and the purposes assigned to it; but beyond this the architect who respects the works of our mediæval ancestors ought not to go. The cases in which the rebuilding of the whole, or a great part, of an old fabric is demanded, will probably be found to be more rare and exceptional than we are at present disposed to imagine; and even the repair of sculptural decoration, and especially the reproduction of ornaments belonging to the earlier styles, is, I take it, altogether wrong in principle." Though Mr. Massé very fairly gives the opinion of M. P. Gout in opposition to the foregoing, he places the responsibility on what he terms the pernicious example of M. Viollet-le-Duc, whose well-known view is also quoted, but adds: "It is not restoration any more than the work carried out at the cathedral churches of Bristol or St. Albans." To add to the disquiet which all the foregoing cannot fail to create, we learn that the causeway is anything but an unmixed blessing, as the currents which formerly circled round the Mount now spend their energies on the foundations, which have had to be renewed in many places.

What with the causeway, the tramway, the cheap trips from Paris, the "restorations," the tendency to modernise the town, and the incongruous if useful telegraph office—the romantic charm which has fascinated every visitor, however callous, will soon be a thing of the past. It seems incredible that Frenchmen can be indifferent to the fate of their priceless gems of architecture.

It is hardly necessary to add that the numerous photographic illustrations are excellent—that of the interior of the almonry being especially a work of art. The drawings by M. Ed. Corroyer should be mentioned, and the four pages of plans lend value to a most useful little work.

A. Needham Wilson.

OBSTRUCTION TO LIGHT.

Re Obstruction to Light. By Henry Bridges Molesworth, M.I.C.E. [London: E. and F. Spon.]

Mr. Molesworth has endeavoured in this book of sixteen pages to show by graphic methods how the obstruction of new buildings to easements of light may be determined. In the introduction he suggests that most authors on this subject have neglected vertical perspective. But it is not necessary or correct to distort the view of a window in order to ascertain the amount of light obtained through it at any point. Such amount must of course be calculated in solar degrees. If diagrams were to be drawn showing the light obtained or lost at any point in a room in such a way that the light were proportional to the area of the window as drawn, each diagram would not be a true picture of the window. It would give a distorted and incorrect view. It would also be wrong in perspective as a drawing.

Mr. Molesworth publishes with the book a planisphere and a tracing therewith to note the path of the sun.

In a mathematical treatise of this kind one should at least state one's data correctly. However, Mr. Molesworth states on page 8 that the variation of the compass in England is about 20½° west, whereas at the present time it is approximately 16° 20′ west for London. An example is then worked out, taking the latitude at 45°, which would be correct for Turin and the region about Sebastopol, but is scarcely of much use for the metropolis. Perhaps, however, Mr. Molesworth considers that his theories might not be accepted by the tribunals in this country.

As the sun has a different declination each day, it is therefore obscured by an obstruction for a longer or a shorter period; hence a separate diagram would theoretically have to be made for each day throughout the year if the total amount lost during the year is required to be ascertained. No allowance is made in this treatise for clouds, which, of course, vary considerably in different parts of the country. Another point that appears to have been overlooked in the first part of the book is that the varying values of the angle of incidence of the sun upon the windows is not taken into account.

In the second part of the work, under the heading of "Diffused Light," Professor Robert Kerr's theories, published in 1865, are again enunciated. Professor Kerr undoubtedly produced a very ingenious scheme, but its great defect lies in the fact that reflected light is not taken into consideration. It will be a necessary corollary to the theories enunciated by Mr. Molesworth, that if no sky is visible there will be no light in a room at all; or that if there be such light, it will prove of no value.

The point that most writers overlook entirely is the fact that the distance of the obstructive erection from the building owning the easement is not taken into account, provided that the angle of obstruction is not increased. The reflected light obtained from such area is often of immense value.

Mr. Molesworth's work is an ingenious production, but as the cases of damage by direct sunlight alone are very rare, and as, of course, it is useless for determining the injury to the best light one can obtain, viz. from the north, it will not be of great practical value, and the principal part of the book relating to diffused light was published by Professor Kerr thirty-eight years ago.

An Appendix has been added to the book which provides rather interesting reading. Mr. Molesworth states that four data are required to obtain the variations of the compass, namely:—

(1) The latitude of the place.
(2) The declination of the sun.
(3) The bearing of the sun by compass.
(4) Either (*a*) the local mean time or
(*b*) the sun's altitude.

Surely it would be simpler just to take in the bearing of the North Star instead of multiplying calculations!

In great circle sailing he also suggests the use of the planisphere, which surely can be fairly likened to the cracking of a nut with the Nasmyth hammer, when by spherical trigonometry one can obtain the courses and distances in a much shorter time. The planisphere is indeed an ingenious production, but it will scarcely prove so useful to architects or to those who go down to the sea in ships as the author seems to imagine.

H. PHILLIPS FLETCHER.

PERSPECTIVE.

Perspective at Sight—R.'s Method. Diagrams for Half Imperial Perspectives. 7s. set net. H. W. Roberts, 4, Wittinpoll Street, Ipswich. [Sold by B. T. Batsford, 94, High Holborn.]

The large diagrams for half imperial perspectives in connection with R.'s method are now published; and those who possess the small book and diagrams, and find them useful, may be glad of the opportunity of obtaining the larger ones.

Being printed on transparent paper, by turning them about each diagram can be used for views from different points, and with the aid of glass drawing-boards, as suggested in the explanatory notes, perspective sketches can be made on thick paper. The addition, on the large diagrams, of lines divided to scale and affording points from which slight projections can be obtained, is a great improvement, while by the employment of "sympathetic lines" it is possible to obtain points set back from the faces of the building.

No doubt the method will prove useful to art teachers and students, draughtsmen in the furniture trade, and others who wish to produce rapid sketches of small objects in perspective, and roughly to scale.

As pointed out previously, it may assist the architectural student, while designing, to realise the general outline and proportion of his group, if he is not able to do so by other means, but it is not intended to supersede the usual system employed for producing carefully drawn architectural perspectives. GEOFFRY LUCAS.

ALLIED SOCIETIES.

THE GLASGOW INSTITUTE.

The Housing Problem.

At the Annual General Meeting of the Glasgow Institute of Architects, held 7th April 1903, the following remarks were made by the President, Mr. Horatio K. Bromhead [*F.*]:—

It appears to me that the most remarkable occurrence of the past year is the way in which the Housing Question has been thrust forward. It seems to have divided itself into two parts: the Housing Problem and the Housing Influenza. Let me get rid of the latter first. A prominent London M.D. identifies influenza in the following way: It spreads by infection; it may attack anyone, has no fixed period of development, and there is no certainty of its development. The forms it may take depend upon the weak parts of the subject, and are so variable as to be protean. Generally the intellect is dulled, the tongue foul, and the attack obstinate. The Housing Influenza corresponds. It may attack Liberals who are out-and-out free-traders. It causes people to advocate urgently a municipal monopoly that is in rank defiance of free trade, and it is beginning to destroy the legitimate business of house building and holding, thus actively defeating the very cause they have so earnestly at heart. They seem incapable of imagining that what they advocate is gradually reducing the natural supply of small houses, and is most cruel to the poor they wish to help. They see it is getting worse, but obstinately shut their eyes to the cause. There are even those who think it is clever to exaggerate misrepresentations of the owners and holders and builders of small houses, and they do not seem able to understand that this is causing moneyed people to think that it may be very unwise to put money in small houses.

Now, what is the Housing Problem? It is a scarcity of houses of the kind the poor would like to live in. Usually the subject is regarded as though it were a jellyfish, without any backbone of its own; something that is nasty and must be pushed with a stick, and not handled kindly. But the backbone of the subject is the volition, the will, the desire, of the poor. Some people will at once say, "Ah! that is the real difficulty. Many of the poor don't know how to live happy, healthy lives." If that is so, why not teach them? Why not issue a pamphlet showing briefly the best way for a poor man to live? An average of 5*s.* each from those interested would be enough money to give a copy to everyone in the city; and, if it were a clever pamphlet, it would probably wipe away the largest and dirtiest part of the Housing Problem. Evil and dirt are not the true nature of humanity, but only the acquired nature; and there are grand and noble examples of how to live. even in our worst slums.

But we can find out what is wanted by analogy. If the city were taxed to create a new department in which working men could get a really good black frock coat and white gloves at half their value, would working-men go out and buy them? Of course they would not. What the working-man wants is "shoddy" cheap clothes of the free-and-easy shape, suitable for his work. Why should we be prudish at the word "shoddy"? Lots of the well-to-do classes wear shoddy in their holidays, and live in houses that are very shoddy, and enjoy living there. This is partly because it suits their pockets. It is shoddy houses that are wanted—cheap and wholesome houses that a man can pay an honest rent for, without the degradation of knowing that he is being made a pauper of by having his rent partly paid by taxes on other people.

How are we to get these houses? If the cruel exactions of the Glasgow Police and Building Acts were altered, and we got rid of our purse-pride about the cost of our buildings, and strove to have, right within the city bounds, districts where our working people could live cheaply and comfortably, and yet where capital would not be cheated, we should have an ideal before us that would lead in a sound direction.

It is the essence of our healthy cities that they have been built under municipal control. There can be no such control by a municipality over itself. London is a wonderful example of health, considering its age and size; and its secret is that it has clear, distinct laws that are not subject to any person's interpretation of them, and the energies of its officials are not hampered by a ridiculous pretence of looking after the rights of adjoining proprietors.

A million of municipal money would only be a drop of what is required for Glasgow—only enough to further disorganise private enterprise and create further overcrowding and misery. Glasgow is marvellously powerful, but the Housing Problem is infinitely too large for it. In the Liverpool City Council, in October last, it was estimated that if they went on building for 2,000 people every year for fifty years they might make up arrears. That probably does not allow for the increase of the city. In Glasgow there can be no doubt about the effect of municipal housing. What may be done by the municipality must simply stifle private enterprise and create a greater need for more to be done.

The letter to the Lord Provost by Dr. David Murray, in connection with this matter, is of two-fold importance. The reception this letter met with indicates the masterful way in which the Corporation are inclined to handle the subject, and also how clearly capital understands that. Secondly, it shows that there is capital in the hands of those who would gladly attend to the Housing Question if it could be done without blind interference to render it financially impossible.

What we want is, not a masterful dealing with the subject that will not allow anyone else to do it, but a masterly fostering and guidance of what ever so many people want to do in a plain, straightforward, business-like manner that will bring an abundance of the good that is wanted. The bird that lays the golden eggs is being killed!

If our rulers were to give up the attempt to do the work themselves, and were to assert their own superior position, and say, We will see it done, done well, done economically, done cheaply, done profitably, done with a sound, healthy result; we will remove the unnecessary restrictions which now make these houses dearer than they need be; we will have the laws altered and made reasonably mild; we will have the revisions in print, and then we will enforce them and nothing more—then confidence might be restored.

If it were made possible, on free-trade lines, then there would be plenty of competition, and there would be sound, healthy, moderate rents and sound, healthy, moderate profits also. Both must be free to go together. There would also be a good deal of extra work created, the half of which would be wages to workmen.

Competitions are still a trouble, owing to their being so often in the hands of people who have not enough knowledge to manage them properly. Edinburgh holds the field for wild doings. There the Lunacy Authorities had a competition, and chose the most expensive design, which professed to cost £238,000 for a lunatic asylum for 1,000 inmates. Later we heard that the work was commenced. Then followed the startling news that the cost would be about £800,000, equal to £800 per bed. Then we heard a whisper of £500 per bed; afterwards, that an experienced architect from the South had been consulted about reducing the cost. It must be a grand thing to be a pauper lunatic in Edinburgh! I wonder how many mansions and grand houses there are in Edinburgh that have cost as much as £500 per bed. There must also be something delightfully fascinating in being able to go ahead like this, and put on rates and taxes for it.

We cannot match that in Glasgow—at least not at present—but we don't know how the Municipal Housing Scheme will develop. We have, however, the Royal Infirmary Reconstruction Scheme still on the horns of a dilemma. The governing powers there had a plan that, in American phraseology, "can't be beat," and they issued this plan to a few architects in a competition for decorating it. But, alas! architectural human nature is weak. Not only did several of the competing architects venture to improve—or should I say alter?—the immaculate plan, but the Architectural Assessor considered these the best, and gave his award accordingly. The Committee, however, were equal to the emergency. They overruled the Assessor's award, and chose the design that most closely followed their own.

THE LEEDS AND YORKSHIRE SOCIETY.

The late Edward Birchall [*F.*].

It is with much regret we have to announce the death of Mr. Edward Birchall, at the age of sixty-five years, which occurred at his residence in Leeds on the 6th ult. after a few days' illness. A member of an old Leeds Quaker family, well known in the staple trade of the city, his early schooldays were spent at Broomfield House, Headingley, which were followed by some additional years at York, and at a well-known Friends' Boarding School at Tottenham. Returning to Leeds, he was articled to Mr. William Perkin, an architect who enjoyed a considerable local practice, and, his indentures completed, he proceeded to London and spent some time in the office of Sir George Gilbert Scott, who was then at the height of his career. The knowledge of ecclesiastical architecture that he there acquired was destined to stand him in good stead and prove of much service to him in his future work. He commenced practice in Leeds in the early sixties, and had not long to wait for commissions. It is interesting to note that his first work of importance was a Meeting House for the Society of Friends in his native town, which he designed in the Italian style to meet the wishes of his clients. Although he was educated in the Gothic School, this building is one of the most successful examples of his work. Correct as regards its exterior, he allowed himself some license in the interior, where some of the detail is reminiscent of his earlier studies. The writer of this notice spent three years in Mr. Birchall's office, and for a few of the following particulars he is indebted to Mr. Walter A. Hobson, another former assistant who was associated with him for a much longer period. Amongst churches which Mr. Birchall rebuilt, added to, or restored, may be mentioned Tadcaster, Enderby near Leicester, Wath near Ripon, Roundhay, and, finally, the Church of All Hallows in Leeds, carried out in conjunction with Mr. John Kelly, who was his partner during the latter years of his practice. He was the architect of the Institution for the Blind in Albion Street, the Convalescent Home at Meltham Mills, near Huddersfield, and several residences for his numerous friends and clients in Leeds, Harrogate, and elsewhere, including Tylney Hall in Hampshire. A large cloth warehouse for Mr. Walter Stead, in Wellington Street, Leeds, was one of his earlier commissions, and other commercial premises were erected from his designs in Basinghall Street for Messrs. Marsh, Jones, Cribb & Co., and also for Mr. Alfred Harris at Kirkby Lonsdale. Possessed of ample means, he did not push his practice, but carried it on in a somewhat old-fashioned, leisurely manner, and eight or ten years ago he retired from active work. He was elected a Fellow of the Institute in 1871, after eight years as an Associate. A member of the Leeds and Yorkshire Architectural Society at its foundation in 1876, he served it as President during the years 1883–84, 1884–85, and proved a genial host to the lecturers who visited the town during his time of office. He had literary and artistic tastes, took much interest in archæological research, and was a member of various societies organised for the promotion of these objects. A liberal and kind friend, he will be greatly missed by a large circle of acquaintance.—W. H. Thorp [*F.*].

MINUTES. XII.

At the Twelfth General Meeting (Ordinary) of the Session 1902–1903, held Monday, 20th April 1903, at 8 p.m., the President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair, with 25 Fellows (including 5 members of the Council), 40 Associates (including 2 members of the Council), and numerous visitors, the Minutes of the Meeting held 30th March [p. 312] were taken as read and signed as correct.

The Secretary announced the decease of the following Members:—Edward Birchall (Leeds), elected *Associate* 1863, *Fellow* 1871; Francis Edwards, elected *Associate* 1857, *Fellow* 1861; Young Bolton, *Associate*, elected 1882; Richard Philip Day, *Associate*, elected 1882; Colonel John Davis, *Hon. Associate*, elected 1887.

The Secretary announced that at the Council meeting held that afternoon the following gentlemen had been elected to the Fellowship under the proviso to By-law 9, viz.:—

JOSEPH SWARBRICK, of 30 St. Ann Street, Manchester.

JOHN WOOLFALL, *President of the Liverpool Architectural Society*, of Bank Buildings, 60 Castle Street, Liverpool.

The following Associate, attending for the first time since his election, was formally admitted and signed the register, viz. William Edward Brooks.

A Paper by Mr. Edwin T. Hall [*F.*] on Four Modern Hospitals having been read by the author and illustrated by lantern slides, a discussion ensued, and a vote of thanks was passed to Mr. Hall by acclamation.

The proceedings then closed, and the Meeting separated at 10 p.m.

FRANCIS CRANMER PENROSE,

M.A.; Litt.D. Cantab.; D.C.L. Oxon.; F.R.S., F.R.I.B.A., F.R.A.S., F.S.A.; Antiquary to the Royal Academy;
Knight of the Order of the Saviour in Greece; late Surveyor to the Fabric of St. Paul's Cathedral.

On the 19th of February last there were met together at the little church of Christ Church, Copse Hill, Wimbledon, a considerable gathering of those who desired to pay the last mark of respect to one whose long life had been active to the end, and throughout distinguished by certain qualities which had drawn to him the more than ordinary regard of his fellows. No one then present could fail to notice the tenderness with which men spoke of him to each other. It was not only the natural sympathy which men feel at the departure of one who had long worked among them, the pathos of the fact that his wife had preceded him by only a few days to the grave; but, beside and beyond these, the knowledge that the life now ended was one as remarkable for its simplicity, gentleness, and generosity of character as for high purpose and keen, intellectual power.

It was impossible for Penrose to speak to or of anyone harshly. Of a highly sensitive nature and keen to feel, he could endure injustice without complaint and with no trace of rancour. Rather than give pain to another he would bear wrong himself. Shy almost to timidity in the company of those with whom he was not intimate, he was exceptionally fearless with regard to physical danger; and when past seventy would walk lightly across footways in the upper regions of St. Paul's which would have tried the nerves of younger men. His modesty was infinite; and those who would learn something as to his own achievement must learn it from others, for he never willingly spoke of himself.

Such was Francis Cranmer Penrose, and characteristics so uncommon are wont to excite first the curiosity, finally the love of other men, especially of those who, working in the same profession, know its ambitions, its demands, and its temptations to the assertion of self. It will be more than usually interesting to trace the career of such a man.

The Penrose family stock is Cornish, and a very large proportion of its men have for generations taken to the Church or the sea as professions. The subject of this memoir originally inclined to the Church, and both his elder brothers were ordained clergymen. John, the eldest, was for some years an assistant master at Rugby, and later conducted one of the best-known schools in the West of England, at Exmouth. Charles, the second brother, was for some years head master of Sherborne School. Francis Cranmer, the youngest of the three, was born on the 29th October 1817 at Bracebridge, near Lincoln, his father, the Reverend John Penrose, being vicar of that parish. His mother Elizabeth was the daughter of the Reverend Edmund Cartwright, F.R.S., the inventor of the power-loom and of the wool-combing machine,* she herself being known to fame by the pseudonym of "Mrs. Markham," author of the *History of England*, which was for many years the standard history for young people.†

It will be seen, therefore, that Penrose was one of the many examples of a man inheriting a special talent through the mother. His second name, Cranmer, is also a heritage from his mother, for she was descended from the sister of Thomas Cranmer, the great archbishop of the Reformation.

The earliest known incident in his life is not without some interest. On 11th August 1820 Mary the sister of the Reverend John Penrose was married to Dr. Thomas Arnold (afterwards head master of Rugby) at Fledborough Church, and young Mrs. Penrose took her little son Frank with her to cheer the home party. The Reverend John Keble was one of the guests.

We have also in a letter dated 2nd June 1823, from an aunt with whom he and his brothers had been left in charge, a glimpse of Francis Penrose as a child—interesting because in it one can recognise something of the man. He was then not six years old. "Frank has taken to drawing, which is a blessing if it does but last." Again: "Pincher (the dog) went to Lincoln with us, and the moment we alighted Frank was on his knees in the street embracing him." We see him, then, with the disposition for drawing already indicated. It was this which led his father later to decide on architecture as his profession. His love of animals was as conspicuous throughout life as it was when the letter was written.

His first few years of school life were at Bedford Grammar School, and he passed thence, in 1829, on to the foundation of Winchester College. Winchester was then, and for many years after, possibly the hardest public school, when all could be cruelly hard to the gentle and unresisting. His first three years there have been described by his elder brother as "years of abject misery." Perhaps the cruelties of that time left traces never altogether effaced. But, like most men, he retained through life an affection for his old public school; and in 1899—just seventy years after he first entered the school—he visited it with his eldest daughter and signed his name with the two dates "1829—1899" in the book at the porter's lodge.

By the time he left Winchester in 1835 his father had decided for him that he should be an architect, and he was straightway articled to Edward Blore. In Mr. Blore's office he remained until 1839, in which year he entered Magdalene College, Cambridge. He was then twenty-two, and one may surmise that his architectural training had not only increased his thirst for knowledge, but had developed his bent for mathematics. He was now a tall, stalwart man, and in each of the three following years—1840, 1841, 1842—he rowed against Oxford in the Cambridge boat, his elder brother Charles, of Trinity, being in the first year one of the same crew. This did not interfere with his steady reading, for in 1842 he came out

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* Edmund Cartwright, D.D., a direct descendant from the sister of Archbishop Cranmer, was born 24th April 1743, and at the age of seventeen went to University College, Oxford. He was elected a Fellow of Magdalen College, Oxford, on taking his degree in 1764, M.A. 1766. In 1772 he published anonymously a poem, *Armine and Elvira*. In 1785 he took out his first patent for a power-loom; others, with various improvements, 1786, 1787, and 1790. His first wool-combing machine was patented in 1789; others in 1790 and 1792. The workmen opposed the use of both inventions. A Manchester mill with four hundred of his power-looms was burnt in 1791. He lost heavily by his inventions; but in 1809, on the petition of fifty Manchester firms, the House of Commons voted him £10,000. He died on 30th October 1823 at Hastings, and was buried at Battle.

† Elizabeth Cartwright, born 3rd August 1780, was married to the Reverend John Penrose in 1804. She borrowed the name "Markham" from the village in Notts where she had spent much of her girlhood, and where she first met her husband. She has been described as an exemplary wife, "with most engaging sweetness and simplicity of manner." She died at Lincoln 24th January 1837. As the question has been discussed lately, it may be mentioned that her son Francis, the subject of this memoir, represented "Mary" of the *History*.

Photo. F. Hollyer, Kensington.

FRANCIS CRANMER PENROSE.

From the portrait by Mr. J. S. Sargent, R.A., in the possession of the Institute.

Senior Optime in the Mathematical Tripos, and was at once appointed "Travelling Bachelor of the University of Cambridge" (1842–45). This may be called his real start in life.

But before we pass from his Cambridge career, and from that epoch when a man makes friends, and makes them for life, let us see who of his contemporaries were among his friends at this time. Prominent among them was Charles Kingsley, who went to Magdalene a year before, and whom he had known previously; and friends of both were Charles Mansfield and John Malcolm Ludlow. Matthew Arnold was his cousin. After leaving Cambridge he became one of a little group of Oxford and Cambridge men, having some tastes and aspirations in common, who, under the name of the "Pudding Club," dined together periodically and kept in touch with each other through life. Of these the only survivors are now Lord Hobhouse and Lord Thring. The former in a kind letter written to one of the family after Penrose's death says: "I can say that his society was always, whenever I could get it, a source of pleasure to me—and, indeed, of profit, too, for he was a man of such varied accomplishments, and of such rich and cultivated mental gifts, that I was never in his company long without adding something of value to my stock of ideas."

Penrose, also, was one of the band of disciples of Frederick Maurice, who exercised so powerful an influence on many of the ablest young men of his time.

It was not long, however, before he had to begin the travels which his University appointment entailed; and since his letters of the time describe them in detail, and they greatly influenced his career, it seems worth while to give a pretty full synopsis of their course and extent.*

Penrose travelled by Southampton, Havre, and Rouen to Paris, where he arrived 9th September 1842. One of the first Englishmen he met there was Mr. Cockerell, who introduced him to some of the French architects, "and who," he writes, "has given me some very good hints on the subject of my journey. I dined in company with him at Versailles, with the King's architect there."

At Paris he remained some two months, lodging with M. Dubût, an architect, and his wife, and learning the language. He visits the various public buildings, and writes home his critical remarks on them to his father. In October he makes an excursion to Chartres, of which he writes with more admiration than of any of the buildings in Paris.

Among the visitors to the Dubûts was "Mr. Disraeli, M.P.," already becoming a well-known personage. Perhaps of all the visits he himself paid in Paris that to the Observatory was the one which had most influence on his life.

He left Paris on 10th November and travelled by Fontainebleau, Sens, and Auxerre to Bourges, stopping a day or two at each, taking measurements and notes, and filled with admiration of the stained glass at the three latter places. Thence by Clermont across to Lyons, the whole journey so far being by "diligence," very slow and often by night. From Lyons (where the fog was dense) he took steamer to Avignon; and on this voyage we find him calculating the pace of the stream by noting the difference of time taken by the steamers in going up from those going down the river. From Avignon he walked by way of the Pont du Gard to Nismes; thence took rail to Tarascon and walked to Arles; and then, at Marseilles, which he describes as dirty and ill-built, he took steamer, and, stopping two days at Genoa, arrived, by Civita Vecchia, at Rome on 29th December 1842.

At Nismes and Arles he had first encountered Roman buildings of importance, evidently with great interest and with a critical eye. At Rome the Pantheon was the first ancient building he visited; and his accurate power of observation is illustrated by this visit in a curious way. On 3rd January 1843 he writes: "It is only the portico which I found unequal to my expectation. I expected the capitals of the columns to be much more perfect, and *the pitch of the roof is steeper than I quite like.*" It was not, I think, till fifty years later that a French "Prix de Rome" architect, M. Chedanne, discovered that the pitch had really been altered.*

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* In the preparation of this little memoir I have been greatly assisted by a perusal of the letters written by Penrose to members of his family—the greater part to his father—whilst on his travels during the years 1842–47. Of these letters I have carefully perused some 420 closely written pages. They form a very interesting record, not only of the journeys made and the impressions received, but of the development of the writer's taste and critical faculty. It will be a surprise to many to know that he left England with a strong preference for Gothic architecture; nor less so to find that, even two years later, it was with reluctance that he turned his steps for the first time towards Greece. - J. D. C.

Penrose remained at Rome on this first occasion for just six months; and during the first three of them, although visiting and deeply interested in the ancient buildings, he did not sketch at all. It seems to have been a particularly wet season, and he mentions that on 7th February 1843 "there was about four feet of water in the floor of the Pantheon," and the Tiber was "upwards of 25 feet above its ordinary level." It was during this time that he occupied himself with his "Latin letter to Cambridge" (which, no doubt, the University had required of him). But here his Gothic proclivities still asserted themselves, and he took as the subject for this essay the Cathedral of Bourges. Of this he wrote to his father: "In endeavouring to make myself full master of the subject I have investigated the thrusts and pressures of the vaulting &c. with, I think, a good deal of advantage to myself."

During his stay he made many excursions, among others one to the ancient Veii in company with Vulliamy (who had recently been in Egypt); another by boat down the Tiber to Ostia; and he mentions a ride with Edward Lear.

He left Rome on 3rd July, travelling by way of Perugia to Florence. Thence he made his way, "mostly on foot," to Ravenna, where he was greatly impressed by the mosaics. Early in September he was in Venice, whence he wrote that he "had not drawn much; there was so much to look at"; and in the same letter he says that he disliked Palladio's churches. "He certainly was not an architect for churches, but for palaces; and, on the other hand, from what I saw of Brunelleschi at Florence, I should say that *he* was not an architect for palaces, but for churches. His are the only churches in the revived Classical style which have pleased me."

Leaving Venice he went by Verona, Brescia, and Mantua back to Florence, there to meet his father in October; and with him he then spent another four months in Rome. Towards the end of March 1844 his father returned to England, and he himself travelled by Orvieto, Siena, and Leghorn to Pisa, Florence, Bologna, and Parma to Milan, and thence by Strasburg back to England; so that we find him in London by the end of May, meeting "the Halls, Dewints, Mr. Blore, and Mr. Cockerell. Mr. Cockerell was remarkably kind and friendly, and gave me several useful hints for my ensuing journey." "I like very much the promise of the Parliament Houses," "Mr. Tite's great work, the Royal Exchange, very disappointing." At the Water-colour Exhibition are "two or three beautiful things of Dewint's, but Copley Fielding is quite worn out." How long ago it seems!

His interest in the Water-colour Exhibition was very real, for he was himself a keen sketcher in water colours, and so continued till late in life. No holiday was complete without some outdoor sketching—sometimes of scenery, sometimes of buildings—and many an Association student will remember the enthusiasm and industry of this oldest member of the sketching party.

At the end of June he rowed down the Thames from Reading with his brother Charles once more; and a month later was again in France, and in August was making his way by Metz and Trèves to Germany, where, at Gotha, he made his headquarters for the next two months, studying the language and making trips to Berlin, Dresden, and Prague. With the latter he seems to have been greatly delighted. In November he visited Nuremberg; and it was in a letter written from that place that he wrote: "I want to get myself into an enthusiasm about Greece, as I am soon to set out for it; but I cannot succeed very well." And he goes on to explain that he had not the same intimacy with Greek authors that he had with "Virgil, Horace, and Cicero" in Latin.

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* M. Chedanne's notes on the Pantheon were read at the meeting of the R.I.B.A., 14th January 1895 [see JOURNAL, 17th Jan. 1895], when Mr. Penrose presided.

Passing by Munich to Trieste he is again in Venice; and having travelled by Padua and Ferrara is at Ravenna, on Christmas Day, on his way by Rimini to Ancona. From that port he embarked on 2nd January 1845 for Greece, and arrived in Athens for the first time on 9th January. "Athens is by far the most miserable town of its size I have ever seen. . . . I was well prepared for it by Corinth, which is the climax of all wretchedness." Such was his first impression of the spot which was to become one of the standing interests of his life. However, a fortnight later, in spite of days alternately windy and wet, he wrote of the Athenian architecture, "My eye is now beginning to take in and better appreciate its beautifully studied forms and proportions," and in the same letter to his brother Charles (now head master of Sherborne) he gives a long and picturesque description of the scenery of Athens. During March he made an expedition to Nauplia, Mycenæ, Argos, and Tiryns; and on his return to Athens wrote: "I have become more and more delighted with the Pericleian monuments."* He had found Athens so attractive, and so much to be done there, that he had made no other expedition when he sailed for Malta early in April, thence to Syracuse, and a little later to Messina and Palermo. He was at Naples by the middle of May, planning a trip into the "Samnite country" and the Lake Fucino, which was carried out before the month expired; so that by June we find him in Rome footsore, but only to start again a few days later by Albano, Terracina, and the mountain country westward of that to Naples, this time with Pæstum and Pompeii in view. Whilst at Naples he fell in with Dr. Tait and Mrs. Tait, and went up Vesuvius with them.

Late in August he left Italy to make his way homeward by Switzerland, Augsburg, Munich, and Cologne, arriving about the end of September 1845.

Penrose had certainly worked assiduously whilst at Athens in the previous spring, and his mathematical mind induced great exactitude in his measurements. He had already determined the hyperbolic curve of the entasis of the Parthenon columns. He had, moreover, been led by Pennethorne's pamphlet to give more than ordinary care to the mensuration which bore on the theory there put forth, and had been in communication with the author.

Hence, probably, it came about that when the Society of Dilettanti became interested in Pennethorne's theories, and desired to subject them to a careful test, Penrose seemed the very man. He combined in an unusual degree a trained knowledge of architecture and of the buildings to be examined, with all the mathematical knowledge and scientific accuracy which were needed to ensure results of value.

Accordingly he was commissioned by the Society to undertake the work; and towards the end of September 1846 he was again on his way across Europe, accompanied by Mr. Thomas Willson, of Lincoln, making for Athens. They travelled by the Rhine, Wurzburg, Nuremberg, and Ratisbon, where Penrose spent two days "taking some accurate measurements of this cathedral. . . . I hope these may be of service in determining whether the Gothic architects worked by determined proportions or no"—a question then recently agitated by Professor Cockerell in the Royal Academy Lectures. They arrived in Athens towards the end of October, and early in November the requisite scaffold was hoisted into place and slung to the entablature of the Parthenon peristyle by the aid of men from H.M.S. "Amazon." In this exposed position, through the bleak winter months, most of the work had to be done. On 27th December Penrose was able to write: "We have ascertained exactly, as far as we have gone, the present position and the perturbations of the greater part of the eastern end of the building; and if we have a few more calm days we shall have quite finished our survey of one half of it." A calm day was necessary for the use of "the big plumb," a weight of about 12 lb., suspended by a copper wire, by means of which the true vertical line was obtained.[*]

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* About this time he received and read Mr. Pennethorne's pamphlet (published 1844). "It has many just views," he writes, "but I am satisfied that he rides his theory too far."

On 8th February 1847 he was able to announce to his father that he had despatched "a long letter to Mr. Hamilton, to be read before the Dilettanti Society, describing the chief matters which I had to communicate to them." But the work on the Parthenon was not finished, and was in fact much delayed by bad weather. The end of March came and found "the most adventurous part of our operations, the measurement and examination of the columns of Jupiter Olympius," just finished.[†] On the 9th April he was able to set out on an excursion into the Morea, "in company with a Mr. Church,[‡] an Oxford man, and a friend of A. Stanley's." This excursion lasted a month, and they returned to Athens, on 6th May, "delighted with everything except the being stopped by brigands at the Lake of Fonia, at the very spot most sacred to Mercury[§] of the whole Cyllene, namely, the spring Tricrena. They took our watches and money and a few other things . . . but did us no further injury."

Penrose finally left Athens on 10th May, his friend Willson having left a month before. He spent a few weeks in Rome, and then turned homewards with Gibson, the sculptor, as fellow-traveller.

On his return to England he was engaged in putting his notes in order for the Society of Dilettanti, and the results were published by the Society in 1851. His scientific accuracy had enabled him to decide the geometrical nature of the several curves which the Greek architects had found necessary to satisfy their refined sense of perfection. The work had been done once for all, and *The Principles of Athenian Architecture* remains a standard record.[‖]

Early in 1852 Penrose was appointed by Dean Milman "Surveyor to the Fabric" of St. Paul's Cathedral. The appointment was avowedly offered to Penrose as to one whose training and experience abroad fitted him for the superintendence of the great scheme "to complete the interior of St. Paul's in accordance with Wren's intentions," which had already become an ambition with Dean Milman; and at the Dean's instigation Penrose read a Paper on the subject of St. Paul's, on 31st May of the same year, at a meeting of the Royal Institute of British Architects, in which the suggestion was somewhat tentatively put forward. But once the proposal was made to him, he himself took it up with a thoroughness that made him look upon the completion of Wren's great work as the object to which he might devote his professional life. How well and how earnestly he worked at putting the great fabric into good order will be best realised by those who are old enough to remember its dirty and gloomy condition previously; but the funds available were very limited,[¶] and it was not till 1858 that the Dean and Chapter issued definite proposals, first, to provide for the famous Evening Services under the Dome, and, secondly, for the completion of the decoration of the interior of the church. An executive committee, including well-known expert laymen, was then associated with the Dean and Chapter, "charged with an endeavour to secure these great objects."

In 1862 Mr. Penrose, in his evidence before the Select Committee on the Ecclesiastical Commission, showed that at least £2,000 additional per annum was required to keep the building in good repair. It was not, however, till 1870 that the great appeal was made.

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[*] To show the care and nicety with which the work was done, it may here be mentioned that the following decimal system was used, 1 foot being the unit:—1·, ·1, ·01, ·001, ·0001. "It is seldom" (writes Penrose) "that this last $(\frac{1}{10000})$ is used, but it occurs sometimes." He continues (29th December 1846): "I proceeded to connect the different levels which I had taken on the step on the four sides of the building, and found that they agreed, so that by starting at one corner and returning to it again I had only a difference of ·002 foot, the instrument having passed round four right angles and levelled a distance of, altogether, more than 650 feet."

[†] One of Mr. Penrose's many contributions to the Institute TRANSACTIONS was on "The Temple of Jupiter Olympius," TRANSACTIONS 1885, N.S. p. 89.

[‡] Of Oriel College; became Dean of St. Paul's during Penrose's surveyorship.

[§] Mercury was the god of thieves.

[‖] A second enlarged edition was published in 1888.

[¶] £790 per annum.

The Committee, now under the presidency of Dean Church (Penrose's fellow-prisoner with Greek brigands), decided that the time was favourable. A meeting was held at the Mansion House on 13th July 1870, and the project was enthusiastically approved. The Council of this Institute forwarded a resolution offering co-operation and sympathy, and a printed appeal was issued, and evoked liberal response. The public thanksgiving for the recovery of the Prince of Wales from dangerous illness, held at St. Paul's in February 1872, again concentrated attention on the building, its worthiness and its requirements. This is not the occasion for reviving the controversies which shortly followed. We have only to take note of the projects which gave rise to them as matters which affected Penrose's relations to the Chapter, the Trustees, and the Decorations Committee.

In warmly advocating the cause of Stevens as to the completion and placing of the Wellington monument *as designed*, he had not pleased Dean Milman. In desiring to keep the decorations within the limits which Wren might reasonably be supposed to have contemplated, he found himself in opposition to a strong and determined clerical body, which was prepared to go much further. A scheme was prominently put forward which no real lover of Wren's work could approve, which was condemned by many of the experts of the Committee and by public feeling, which the Trustees resolutely refused to sanction, and which, therefore, was at last abandoned. But the whole subject had become controversial, and the Surveyor's position difficult.

Penrose had indulged one ambition—to complete the great work of Wren. He devoted himself to that as the great object of his professional life: to complete it as Wren would have completed it, that was his ideal; and it was in this one ambition—perhaps the only one he permitted himself to entertain—that he found the one great disappointment of his life. He was set aside, and that in no gracious way. After having himself done much—and the taste of what he did towards the work has not been questioned—he saw schemes put forward and carried out upon which he was not even consulted, and of which, whatever the ultimate opinion may be, it cannot be said that Wren had so conceived them. But he was not the man to bewail or discuss his ill-treatment. His friends never heard of it from himself; within his family the subject was forbidden. With a true philosophy he threw his mind vigorously into other subjects, and found in the exercise of his scientific ingenuity and in the study of the grand infinity of the heavens an ample solace and a delightful serenity.

Penrose devoted much of his leisure to astronomy and to the contrivance of instruments for the delineation of curves, for the solution of questions of spherical trigonometry, or for obtaining mathematical accuracy in practical architectural work. His astronomical work went much beyond that of an amateur. His interest in astronomy seems to have been first seriously aroused by his visit to the Paris Observatory in 1842 under Arago and Laugier. But it was not till 1852 that he made a more definite move in practical observation, as to which his own words may be quoted: "I had bought a theodolite chiefly for use in the accurate measurement of the height of buildings, which I had previously essayed by various approximate methods of triangulation; and on showing this instrument to Dr. G. Boole, of Queen's College, Cork, who happened to pay me a visit, he pointed out to me the interest it would add to what I proposed to do if I turned it also to the heavenly bodies. After this I frequently used it for questions of accurate orientation and time" (as for sundials, &c.).

"In 1862 I bought a small astronomical telescope, and four or five years afterwards a larger one (5¼-inch object glass, by Steinheil), equatorially mounted by Simms."

In 1866 accident led him to go into the subject of "the prediction and reduction of occultations and eclipses," with the result that in 1869 he brought out a book on the subject, "which was sufficiently sold to run itself out of print." In 1870 he went to the south of Spain to observe the solar eclipse, which, however, was partially overclouded; and in 1878 he joined an eclipse party which went to Denver, in Central N. America, where all was favourable for that eclipse (29th July 1878), and the report of his observations was included in the U.S. official book. In 1881 he read to the Royal Astronomical Society a Paper on a graphical treatment of prediction in relation to comets; and later contributed a more detailed article on the same subject to Chambers's *Handbook of Astronomy* (chap. vi.), 4th ed. 1889. His latest work was that of obtaining on the spot, by observation of the sun or stars, the requisite data, and the application of the formulæ for finding the places of stars at distant epochs, so as to establish a connection between the orientation of Greek temples with certain stars which at some period (assumed to be the time of their foundation) were coincident at their rising or setting with the direction of the axes of the temples in question.* His practical application of his method to Stonehenge in conjunction with Professor Sir Norman Lockyer was explained at a meeting of the Institute but a few months ago.†

In 1882 a project was started in which Penrose took great interest. This was for the foundation of a British School of Archæology at Athens. A committee was constituted in October 1883, of which he was an active member. The Greek Government generously gave a site for the building, for which Penrose prepared plans (without fee), and twice visited Athens during its progress. It was completed in 1886 at his estimated cost. He was requested to become the Director of the school for its first session, 1886–87, and he accepted the appointment after arranging for the interim performance of his duties at St. Paul's. He again took charge of the school during a part of the session 1890–91. The value of the work done by students of the British School at Athens, in Crete, and elsewhere in developing a knowledge of the older civilisations is daily brought home to us.

Mr. Penrose married in 1856 Harriette, daughter of the late Francis Gibbes, surgeon, formerly of Harewood, Yorkshire. Her death occurred only a few days before his own. There were five children of the marriage—a son and four daughters—who all survive. The son, Dr. Penrose, is physician to St. George's Hospital and to the Hospital for Sick Children in Great Ormond Street. The eldest daughter is the distinguished Principal of Holloway College.

Mr. Penrose lived for some forty years past in the house which he built for himself near Wimbledon, and in the grounds of which was the small observatory which engaged so much of his leisure. At this house he died on the 15th February 1903, being in his eighty-sixth year.

When we come to sum up his whole career it is but natural to ask the question, "Was it successful; did it fulfil its promise?" As a creative architect he left no great work, though all that he did leave was marked by the refinement of the man. Had he been absolutely dependent on his profession it is to be feared he would have been a poor man, for he had devoted the best of his life to St. Paul's. But when we ask concerning anyone, "Was he successful?" we must also ask ourselves, "What is success?" Perhaps we are all too apt to measure success by conventional standards in which monetary reward and wide repute claim a large part. Yet it is certain that these, combined or apart, cannot in themselves bring happiness, nor even content. He was perhaps an example of the saying, "Recta ingenia debilitat verecundia." He would have had more obvious success had he been more pushing; but had he not something better—"love, obedience, troops of friends"? With what an affectionate deference was he greeted by his professional brethren, and with what a grateful delight did he recognise their kindly bearing towards him! Those who should know assert that of all the honours which came to him late in life the one which gave him the most pleasure was that bestowed on him by his brother architects—the Presidency of the Institute.

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* Trans. R.S.

† JOURNAL R.I.B.A., 25th Jan. 1902: "An Attempt to ascertain the Date of the Original Construction of Stonehenge from its Orientation."

And they were no mean honours, the others. Look at the head of this memoir! Many a good man may covet any one of them. They came unsought. "Sequi enim gloria, non appeti debet." None can say that they were undeserved.*

If to have carried through a long life a name untarnished, to have held to truth and right, to have been free of any mean or petty impulse, and to have won the affectionate respect of his fellows be success, then I think that Francis Cranmer Penrose was a successful man. That he was a happy one, too, as happiness is allowed to men, we need not doubt. His health, his strength, his sight, and his keen intellect were preserved to him in old age. The interests of middle life had not palled. His mind was occupied, his hands busy. He was happy in his family; nor did the meaner cares of life press heavily upon him; happiest, perhaps, that when the final call came he could pass the barrier with something of the simplicity of childhood yet upon him, and hand in hand with his life's companion.

Farewell, kind, gentle friend, lover of exact truth, Christian gentleman! "Gloriam qui spreverit, veram habebit."

J. D. Crace [*H.A.*].

April 1903.

A LIST OF SOME OF THE WORKS CARRIED OUT UNDER THE DIRECTION OF THE LATE MR. PENROSE.

No complete list of works is available, but the following may be quoted:—

At St. Paul's Cathedral—
- The choir schools.
- The choir seats and desks.
- The marble pulpit and stairs.
- The carved oak lobbies to western entrances and N. Transept.
- The portico within the N. Transept.
- The mosaic pavements of the Crypt.
- The Wellington tomb in the Crypt.
- The font and pavement in S. Chapel.
- The removal of the Wellington monument to its present position.
- Marble memorial to Lord Napier of Magdala.
- The Bourdon bell and new clock in the N. Campanile and the peal of bells in the S. Campanile were erected under his direction.
- The exposure of the remains of the ancient cathedral in the churchyard.

General works—
- At Athens: the British School of Archæology.
- St. Stephen's, Walbrook: carved oak choir stalls [see Transactions R.I.B.A. 1890].
- Magdalene College, Cambridge: the entrance gate and general repairs.
- St. John's College, Cambridge: new wing.
- Rugby School: infirmary wing.
- Lavenham Church: reredos.
- Long Stanton: All Saints, restoration.
- Harefield, near Uxbridge: the vicarage.
- Maid's Morton, Bucks: the vicarage.
- Escrick Church.
- Chilvers-Coton, Nuneaton: restoration of church.

Also various additions and alterations; *e.g.* for Lord Powerscourt, in Ireland; for the Hon. Cavendish Bentinck, at Branksea Island and at Whitehall; for the Marquess of Bristol, at Ickworth, Suffolk; for the Baron Hirsch, in Berkeley Square; and for F. L. James, Esq., at 14, Great Stanhope Street.

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* The honours accorded to Mr. Penrose were as follows:
He became a Fellow of the R.I.B.A. in 1848.
Fellow of the Royal Astronomical Society, 1867.
Royal Gold Medal R.I.B.A., 1883.
Hon. Fellow Magdalene College, Cambridge, 1884.
Fellow of the Royal Society, 1894.
President R.I.B.A., 1894–6.
Fellow of the Society of Antiquaries, 1898.
Antiquary to the Royal Academy of Arts, 1898.
Litt.D. Cantab., 1898.
D.C.L. Oxon., 1898.
Knight of the Order of the Saviour in Greece.

Particulars of Mr. Penrose's long connection with the Institute, which began with his election as Associate in 1846, were given in the Journal for the 21st February, together with a list of his Papers read before the Institute.

REPORT OF THE COUNCIL FOR THE OFFICIAL YEAR 1902–1903.

Approved and adopted by the Annual General Meeting, Monday, 4th May 1903.

SINCE the publication of the last Annual Report the Council have held 19 meetings, of which the Council elected in June last have held 16. The following Committees of Council have met and reported to the Council on the matters referred to them :—The Finance Committee, Professional Questions Committee, Conditions of Contract Committee, Assessorships Committee, Past Presidents' Portraits Committee, Annual Dinner Committee, Professional Status Committee, Penrose Memorial Committee.

The losses by death have been as follows :—*Fellows :* Edward Birchall, Francis Edwards, Charles France, Thomas Oliver, John Bond Pearce, Francis Cranmer Penrose, William Salway, Thomas Roger Smith, Coutts Stone, William Wimble. *Associates :* Young Bolton, Albert Charles Breden, Richard Philip Day, Henry Dunkin Shepard, James Foster Wadmore. *Retired Fellows :* Samuel Stenton Markham, George Truefitt. *Hon. Associate :* Colonel John Davis. *Hon. Corr. Members :* Eugène Müntz, Emerich Steindl.

By the death of Mr. Penrose the Institute has lost one of its most distinguished and venerated members. The first paper of the present Session was read by him with unimpaired vigour and enthusiasm ; now the Council with sorrow have to record his death. In Professor Roger Smith the Institute has lost a familiar friend, a loyal supporter, and a wise counsellor.

The Royal Gold Medal was awarded last year to Mr. T. E. Collcutt.

It has been decided to award the medal this year to Mr. Charles Follen McKim, of New York, President of the American Institute of Architects. His Majesty the King has signified his approval of the nomination. Mr. McKim will come to London to receive the medal in person at the meeting of the Institute on Monday the 22nd June.

The following tabular statement shows the present subscribing membership of the Institute, compared with that at the corresponding period last year :

Year	Fellows	Associates	Hon. Associates	Total
1902	617	1,071	44	1,732
1903	627	1,117	43	1,787

During the official year since the last Annual General Meeting 30 Fellows have been elected, 68 Associates, and 2 Honorary Associates. One Hon. Corr. Member has been elected : Constant Moyaux (Paris).

The number of candidates for the Progressive Examinations continues to increase. They were held in June (Final and Special in July) and November 1902. The Preliminary was held in London, Birmingham, Bristol, Exeter, Glasgow, Leeds, Manchester and Newcastle-on-Tyne; the Intermediate in London, Bristol, Glasgow, Leeds, Manchester and Newcastle-on-Tyne; and the Special Examination for Colonial candidates in Montreal and Melbourne. The Council desire to record their thanks for the valuable services rendered by the Hon. Secretaries and Examination Committees of the various Allied Societies, and the Institutes of Quebec and Ontario, and the Royal Victorian Institute. The Final and Special Examinations were held in London. The results are shown in the following tabulated form:

	Exempted	Examined	Passed	Relegated	Total
PRELIMINARY EXAMINATION	94	276	215	61	370
INTERMEDIATE EXAMINATION	5	196	105	91	201
FINAL AND SPECIAL EXAMINATIONS . .	—	126	70	56	126

The total number of candidates was 697, as against 674 in 1901. The total number of candidates in 1892 was 359. The number of Probationers now stands at 1,900, and of Students at 446.

In the above statistics the Council desire to point out the new category of "Exempted" under the "Intermediate" heading. An arrangement has been made with University College, Liverpool, whereby any Probationer of the Institute who, having been through the full two years' course in Architecture, has obtained the Professor's Final First Class certificate, and whose work done during his course at the College is found satisfactory by the Board of Examiners, may be exempted from the Intermediate Examination; the Institute being represented by a member of the Board of Examiners at the examination held for the purpose of granting certificates by the authorities of University College, Liverpool.

The Ashpitel Prize was awarded to William Greenwood, who passed the Final Examination in November 1902.

The Special Examination for Colonial candidates will be held this year in Montreal and Sydney.

The Council desire to thank the Board of Examiners for the invaluable services they continue to render to the Institute.

The Statutory Examinations, qualifying for Candidature as District Surveyor in London and for Candidature as Building Surveyor under Local Authorities, were held in October. Certificates of competency to act as District Surveyors in London have been granted to William George Perkins and Arthur Halcrow Verstage [*A.*].

The Council, with the approval of the London County Council, have decided to hold these Statutory Examinations for the future only once a year, *i.e.* in October.

The Deed of Award of the various Prizes and Studentships was presented to the Institute at a General Meeting on the 19th January. At the distribution of Prizes on the 2nd February, after the Address to Students by the President, a detailed criticism of the work submitted was read by Mr. Walter Millard [*A.*]. An exhibition of the drawings was held from the 20th to the 31st January in the Gallery of the Alpine Club, and was visited by 1,264 persons. A selection from the Prize Drawings is now being sent the round of the Allied Societies.

The Annual Dinner of the Royal Institute took place on the 19th June 1902, and was attended by a numerous company. A special feature was the presence of many distinguished representatives of the Colonies who were in London for the purpose of attending the Coronation.

The Annual Dinner will be held this year on Tuesday the 23rd June, at the Whitehall Rooms, Hôtel Métropole.

The Council sent an Address of Congratulation to His Majesty the King on the occasion of his Coronation.

A scheme for decorating the front of the Institute for the Coronation on the 23rd June, designed by Mr. G. F. Bodley, R.A., was being put into execution when the unhappy news of the King's illness was made public. The scheme was, however, carried out in order that Mr. Bodley's artistic design might be realised. A portion of the materials was utilised as decorations for the Coronation on the 9th August.

On the occasion of the Coronation the King honoured the Institute and the profession at large by conferring a knighthood upon the retiring President, Sir William Emerson.

During the official year the Edinburgh Architectural Association has been admitted into alliance with the Royal Institute. The Council have much pleasure in recording the fact, as now there is no non-metropolitan architectural society of any importance which is not constitutionally associated with the Institute, and thus have been furthered the unity of organisation and the concentration of architectural influence which have been the aims and policy of the Institute since 1889. The Council desire warmly to support the President in his views concerning the Allied Societies expressed in his Opening Address. They welcome any communications from the various Councils, either as suggestions of policy or requests for advice or assistance, and particularly urge Hon. Secretaries to contribute to the JOURNAL matters of professional interest in their respective districts.

In the last Annual Report the Council stated that the Committee of the Architectural Association and themselves had adopted the recommendation of a joint committee of the two bodies, that the Institute and the Association should combine in a building scheme to house both bodies under one roof. The Architectural Association, however, having decided to take over the premises of the Royal Architectural Museum, consideration of this joint building scheme has been abandoned. The question of new premises for the Institute is one which the Council have always before them; but they feel that it is wiser to wait for a favourable opportunity of securing a site that meets with all the requirements of the Institute than to commit themselves to any undertaking to inaugurate a building scheme within a definite period. As a favourable opportunity may not occur in the immediate future, the Council have made certain improvements in the meeting-room which they hope tend to the comfort of members as well as to the convenience of the working of the Institute. In order to obtain proper picture space, so that the valuable collection of portraits may be seen to the best advantage, the recess behind the Chair has been altered according to the design of Mr. J. S. Gibson, who kindly acted as honorary architect. The new system of electric lighting by means of reflection from the ceiling has been carried out from the designs of Mr. J. Slater and Mr. E. T. Hall. The wall opposite the Chair has been lined with bookcases, which will relieve the pressure on library space for some time to come.

With regard to the portraits of past Presidents, the Council have decided to issue an album of photogravure reproductions, with spaces for future plates. This album will be obtainable by members at a price to be hereafter settled. Due notice will be given in the JOURNAL.

The Practice Committee, as will be seen from their report, have done excellent work this Session for the Institute. To them is due the book on Dilapidations published this year. The Council especially tender their thanks to the Chairman, Mr. Douglass Mathews, and to the sub-committee, consisting of Messrs. S. Flint Clarkson, Sydney Perks, and C. H. Brodie, upon whose shoulders the labour of preparation chiefly fell.

A Form of Contract, for use where quantities form a part of the contract, prepared by the Practice Committee, has been issued as an Institute publication.

With regard to the point raised on the discussion of the last Annual Report, as to the possible effect of the decision given in the case of *Hobbs* v. *Turner* upon the validity of the Institute Form of Contract, the Council have been advised by the Institute's solicitors that it is unnecessary to alter the present Form in view of that decision.

The London Building Acts (Amendment) Bill, submitted by the London County Council for the criticism of the Institute, was investigated by the Practice Committee, who issued a report to the Council. The Council were considering this report, having in the meanwhile signified to the London County Council their opinion that the measures proposed were far too drastic to obtain their support, when the Bill was suddenly withdrawn. The Council will take the necessary steps to advise the London County Council with regard to the provisions of any amended Bill.

The Ancient Lights Bill, approved by the Council of the Institute and the Council of the Surveyors' Institution, is now in the hands of Mr. J. Fletcher Moulton, K.C., M.P., who has kindly undertaken to be responsible for its introduction into Parliament.

The Council sent in a petition to the Privy Council praying that a Royal Charter of Incorporation should be not granted to the Auctioneers' Institute, on the grounds that such a grant would seriously affect the value attached to the possession of a Royal Charter. The petition of the Auctioneers' Institute was refused.

At the General Meeting of the 2nd March the President made an announcement with regard to the question of Registration to the effect that the Council were still opposed to any such scheme of Registration as that set forth in a previous Bill dealing with the same subject. The Council have since issued a memorandum to the Presidents of the Allied Societies, which has been printed in the JOURNAL of the 4th April.

The operation of part of the proviso of By-law 9 lapses this year on the 18th May, viz.: "Provided always that when the Council of the Institute receive a unanimous recommendation formally submitted by the Council of any Allied Society that a practising member of the profession is eligible and worthy of being elected as a Fellow, the Council shall, during the five years from the date of approval of this provision by the Privy Council, have power to elect him, if in their opinion his work be of sufficient merit." The second clause: "The Council shall also have the power to elect annually to the Fellowship without ballot the President or President-elect of any of the Allied Societies who may be eligible and apply for admission," is not subject to the five years limit.

In the autumn the London County Council announced their decision to abandon the design of a stone bridge at Vauxhall, and to replace it by an iron and steel structure designed by their engineer. The Council inspected the design and reported adversely to the London County Council, urging them to call in the services of an architect. After some correspondence the Council were informed by the London County Council that their architect would be called into collaboration with their engineer. The principle of the association of engineer and architect in bridge-building which they have so long urged has thus at last been admitted by the London County Council.

The Council have taken action with regard to the proposed demolition of All Hallows Church. A letter was written to the Ecclesiastical Commission to the following effect: That the Institute views with regret the proposed demolition of another of Sir Christopher Wren's churches, which has a peculiarly successful interior, and desires to express the hope that means may be found to preserve the building intact; but that if circumstances prevent this the church should, if possible, be re-erected upon a suitable urban site, stone by stone, and in any case that the fittings should be suitably rehoused in a building of the same character, where the whole of them could be brought together so as to preserve the unity of their design.

In the last Annual Report reference was made to the question of the appointment of Assessors in competitions, and it was stated that a Select Committee of the Council were considering the various matters referred to them. The Council duly received the report of their Committee, and were brought to the conclusion that the appointment of Assessors was best left entirely in the hands of the President of the Institute, and that, even were it desirable, there was little chance of success in trying to establish the jury system in this country. A practical result of these deliberations was (1) a revised edition of the "Suggestions for the Conduct of Architectural Competitions" and (2) a confidential set of suggestions for the guidance of Assessors.

A copy of the "Suggestions for the Conduct of Architectural Competitions," with a circular letter, was sent during the summer to every Town Council, Urban District Council, and Rural District Council in the United Kingdom.

The following tabular statement shows the appointments to Assessorships during the official year :—

Competition.	Town.	Assessor.
Municipal Offices	Acton	Mr. J. Macvicar Anderson.
Municipal Buildings	Barry	Mr. T. E. Collcutt.
Artisans' Dwellings	Bermondsey	Mr. John Slater.
Municipal Offices and Public Library	Bideford	Mr. Frank T. Baggallay.
Clock Tower	Cambridge	Mr. J. Alfred Gotch.
Town Hall	Chepping Wycombe	Mr. Thomas E. Collcutt.
Schools	Clacton-on-Sea	Mr. A. W. S. Cross.
Free Library	Fenton	Mr. Ernest George.
Public Library	Greenwich	Mr. John Belcher, A.R.A.
Town Hall	Harrogate	Mr. J. Macvicar Anderson.
Town Hall	Hull	Mr. John Belcher, A.R.A.
Free Library	Ilkeston	Mr. Henry T. Hare.
Public Library	Kettering	Mr. J. Alfred Gotch.
Free Library	Maidenhead	Mr. E. W. Mountford.
Hospital for Skin Diseases	Manchester	Mr. Keith D. Young.
Public Library	Mansfield	Mr. A. N. Bromley.
Cottage Homes	Northampton	Professor Beresford Pite.
Public Offices	Pontypridd	Mr. James S. Gibson.
Technical School and Public Library	Ramsgate	Mr. Henry T. Hare.
Police and Fire-Station Buildings	Sunderland	Mr. James S. Gibson.
Municipal Offices	Tottenham	Mr. J. Macvicar Anderson.
Higher Grade Schools	West Hartlepool	Mr. John W. Simpson.

Copies of the "Suggestions" have been specially sent to the promoters of the following competitions, together with letters asking for a copy of the conditions for the Institute. In cases where it has been known that no Assessor was to be appointed, a letter urging the appointment has been made to the promoters. In other cases a protest against the conditions has been made by the authority of the Council.

Abersychan, Council Offices and Free Libraries.
Acton, Town Hall and Public Offices.
Allahabad, Queen Victoria Memorial.
Arbroath, N.B., Golf Club House.
Ashton-in-Makerfield, Infectious Diseases Hospital.
Aylesbury, War Memorial.
Barry, Municipal Buildings.
Bermondsey, Artisans' Dwellings.
Bideford, Municipal Offices and Public Library.
Blackpool, Technical Schools.
Bristol, Central Library.
Caerphilly, Congregational Church.
Cape Town, University Buildings.
Castleford, Free Library.
Chelmsford, Infectious Diseases Hospital.
Chepping Wycombe, Town Hall and Municipal Offices.
Clacton-on-Sea, Schools.
Clapham, Orphanage.
Crewe, Municipal Buildings.
Cumberland, Extension of Lunatic Asylum.
Cumberland, Public Library.
Deptford, Town Hall.
Devonport, Working Class Dwellings.
Durban, Town Hall and Museum.
Eccles, Workmen's Dwellings.
Edinburgh, Usher Hall.
Fenton, Free Library.
Folkestone, Town Hall.
Gillingham, Public Baths.
Glasgow, Public Libraries.
Glasgow, Workmen's Dwellings.
Grantham, Cottage Home for Nurses.
Greenwich, Public Library.
Hamilton, N.B., Dwelling House Tenements.

Hamilton, N.B., Masonic Temple.
Hammersmith, Central Library.
Holyhead, School and Teacher's House.
Hull, Soldiers' Memorial.
Hull, Town Hall Extension.
Kettering, Free Library.
Kingston, Children's Home.
Leftwich, Fever Hospital.
Leith, Poor House.
Liverpool, Baths and Tramway Offices.
Liverpool, Church.
Liverpool, Workmen's Dwellings.
Lowestoft, Wesleyan Church and Schools.
Maidenhead, Free Library.
Manchester, Hospital.
Merthyr Tydfil, Isolation Hospital.
Montrose, Public Library.
Motherwell, N.B., Poor House.
Narborough, County Asylum.
Newark, Infirmary Additions.
Newtown-le-Willows, Church.
Northampton, Cottage Homes.
Nottingham, Methodist Church.
Pontypridd, Public Offices.
Ramsgate, Technical Schools and Free Library.
Rawtenstall, Library.
Rochester, Infectious Diseases Hospital.
St. Ives, Municipal Buildings.
St. Mellons, Isolation Hospital.
Salisbury, Free Library.
Sedgefield, Infectious Diseases Hospital.
Sheffield, Artisans' Dwellings.
Southampton, Municipal Buildings.
Southend-on-Sea, Church.
Stockton-on-Tees, Girls' School.
Sunderland, Extension of Victoria Hall.
Surbiton, Clock Tower.
Sutton Coldfield, Town Hall.
Swansea, Church Hall.
Taunton, Free Library.
Torquay, Municipal Buildings.
Tottenham, Municipal Offices.
West Hartlepool, Higher Grade Schools.
Whitehaven, Technical College.
Yeovil, Municipal Buildings.

The Council have empowered the Competitions Committee, so as to avoid delay, to take independent action where necessary in respect of any competition within the scope of the "Suggestions." To prevent possible misconception among members, the Council desire to state that in the great majority of cases the unsatisfactory points in conditions are of so obvious and simple a nature as to be adequately dealt with in the routine of the Secretary's office without troubling the Committee to meet.

The Council also desire to refer to the Competition Reform Society, with whose aims they are quite in sympathy. The Society reports to the Secretary of the Institute any competition matter that may need investigation. The matter being thus placed in the Secretary's hands becomes an entirely Institute question, and in furnishing such material for Institute action—material which it would be often impossible to obtain officially—the Competition Reform Society is doing exceedingly useful work.

Mr. E. T. Hall and Mr. Thos. W. Cutler have been appointed by the Council to represent the Institute at the Annual Congress of the Sanitary Institute, to be held in Bradford in July.

Mr. Alfred Culshaw has been appointed by the Council to represent the Institute at the Annual Congress of the Royal Institute of Public Health, to be held in Liverpool in July.

The President's first "At Home" on the 12th January was largely attended, nearly 400 members being present. The feature of the evening was a collection of drawings by the late Mr. J. F. Bentley. The second "At Home" will be held on Monday, the 11th May, when a collection of drawings by the late W. Eden Nesfield will be exhibited.

In presenting the statement of income and expenditure and the balance-sheet for the year ending 31st December 1902, and the estimate of income and expenditure for the current year [appended, pp. 357 *sqq.*], the Council have again the pleasure to draw attention to the continued financial prosperity of the Institute. The balance of income over expenditure of £1,028 15*s.* falls somewhat short of the estimated balance, but the unforeseen expenditure for the Coronation decorations accounts for the difference.

Owing to the many additions made in recent years, the property of the Institute was found by the Council to be considerably under-insured. The Council at Michaelmas therefore took out a fresh policy with the Westminster Fire Office, to the total value of £22,700.

The Council have entered into a contract for advertisements in the Journal and Kalendar with Messrs. Jennings & Tofts, of 17 Old Queen Street, Westminster, on the basis of £900 per annum for the first three years, and £1,000 for the next six years. The full amount of £900 does not appear in the estimate, as a portion of it was credited to last year's accounts.

The Council have this year invested the sum of £1,119 16*s.* 10*d.* in the purchase of Great Western Railway stock. The total invested capital of the Institute amounts to £12,838 19*s.* 3*d.*

REPORT OF THE ART STANDING COMMITTEE.

At the first Meeting of the Committee Mr. Macvicar Anderson was appointed Chairman; Mr. T. E. Collcutt Vice-Chairman; and Messrs. E. W. Mountford and James S. Gibson Hon. Secretaries.

The matter of the design for the new Vauxhall Bridge has been the principal business engaging the attention of the Committee during the current session, and it is gratifying to know that in consequence of the Committee's representations made to the London County Council, the design formerly proposed has been discarded.

The Committee are also glad to intimate that the County Council have decided that their architect shall be associated with the engineer in regard to the design and architectural details of the structure.

The work of the widening of London Bridge has been in progress during this year, and the suggestions of the Committee regarding the details of the design have been practically adopted by the Corporation.

The records of old, historical, and interesting buildings in London now being prepared by the London County Council, as also the question of the advisability of rebuilding the Campanile of St. Mark's, at Venice, have been under consideration.

REPORT OF THE LITERATURE STANDING COMMITTEE.

Since the election of the present Committee in June 1902, the Literature Committee have held seven meetings.

At the first meeting Mr. R. Phenè Spiers was re-appointed Chairman; Mr. H. Heathcote Statham, Vice-Chairman; Messrs. Leslie Waterhouse and A. Maryon Watson were appointed Hon. Secretaries.

The following Sessional Papers, arranged for by the Committee, have been read:— "The Drawing of the Ionic Volute," by the late Mr. Penrose, F.R.S., Litt.D., D.C.L., and "A Note on a Fragment of the Parthenon Frieze," by Dr. A. S. Murray [*H.A.*], on 17th November 1902; "The Palace of Knossos, Crete," by Dr. Arthur Evans, on 15th December 1902; "Science Workshops for Schools and Colleges," by Professor H. E. Armstrong, F.R.S., on 19th January 1903; "College Planning," by Mr. Basil Champneys, B.A., on 16th February; "Westminster Cathedral," by Mr. Charles Hadfield [*F.*], on 16th March; "Fire Prevention," by Mr. Horatio Porter [*A.*], together with a Report by the Science Committee on the Fire Offices' Regulations, on 30th March; "Four Modern Hospitals," by Mr. Edwin T. Hall [*F.*], on 20th April; and a Paper by Sir Martin Conway, on "The Formation of the Ancient Style of Egyptian Architecture," has been arranged for the 18th May.

The Committee desire again to acknowledge their indebtedness to the authors of the various reviews and articles contributed to the JOURNAL, and to the publishers who have contributed many interesting works to the Library during the year.

An extra grant of £25, received from the Council, has enabled the Committee to extend the Loan Collection by the purchase of many much-needed works in duplicate, in addition to those purchased from the ordinary funds.

The Librarian reports to the Committee as follows:—

During the twelve months ending on the 31st March of the present year 145 volumes and 35 pamphlets have been added to the Library of the Royal Institute, exclusive of periodicals, reports, and Transactions of Societies, and parts of works issued in serial form.

The number of works presented to the Reference Library was 69.

The works purchased comprise 76 volumes, out of which 44 volumes were added to the Loan Library.

The attendances of readers in the Reference Library during the year numbered 4,375 (last year 3,889). The number of borrowers of works from the Loan Collection was 2,609 (last year 2,132).

The number of works issued through the post was 53.

The number of tickets issued for admission to the Library, other than to members of the Institute or to Students and Probationers, was 81.

Donations of books have been received from Mr. Max Clarke, Mr. J. D. Crace, Dr. C. Waldstein, Mr. Arnold Mitchell, Mr. B. Ingelow, Prof. G. Clason, Mr. E. W. Wimperis, Mons. L. Cloquet, Comte de Lasteyrie, Prof. F. Meldahl, Don E. S. Fatigati, Signor L. Beltrami, Mr. F. Bligh Bond, and Mr. Mowbray A. Green.

Amongst the books presented or acquired during the year, the following may be mentioned: Enlart's *Manuel d'archéologie française*; Odrzywolski's *Die Renaissance in Polen*; Playfair's *Travels in the Footsteps of Bruce*; Beylié's *L'Habitation Byzantine*; Mâle's *L'Art religieux du XIII*^{e} *siècle en France*; Schmidt and List's *Interieurs von Kirchen und Kappellen in Österreich*; Serlio's *Libro IV: Regole generali di architetura sopra le cinque maniere degli edifici* (fo. Venice, 1537); *Concours Rougevin et Godebœuf depuis leur fondation jusqu'à* 1902 (Ecole Nationale des Beaux-Arts); Durm's *Die Baukunst der Griechen*; Anderson and Spiers' *Greek and Roman Architecture*; Reeve's *Fountains Abbey*; Schultz and Barnsley's *Monastery of S. Luke of Stiris in Phocis.*

LIBRARY STATISTICS, 1902-03.

DATE	DAY ATTENDANCES. 10 a.m. to 5 p.m.					EVENING ATTENDANCES. 5 p.m. to 8 p.m.					
	Members.		Non-members.			Members.		Non-members.			
	Library.	Periodicals only.	Library.	Periodicals only.	Total.	Library.	Periodicals only.	Library.	Periodicals only.	Total.	Books issued on Loan.
1902.											
April	62	8	147	9	226	41	12	75	16	144	248
May	63	10	135	12	220	34	13	84	9	140	254
June	53	16	118	11	198	28	7	75	4	114	160
July	93	12	126	22	253	38	7	45	11	101	164
August	Reference Library closed.					Reference Library closed.					57
September	92	12	126	9	239	18	6	15	10	89	201
October	101	9	205	13	328	57	13	109	19	198	269
November	63	4	173	6	246	29	13	101	21	164	242
December	72	11	106	7	196	38	6	79	15	138	195
1903.											
January	117	6	138	14	275	66	13	80	17	176	254
February	77	10	149	14	250	56	23	102	14	195	256
March	79	24	137	21	261	67	19	119	19	224	309
TOTAL	872	122	1560	138	2692	472	132	924	155	1683	2609

Books were borrowed from the Loan Collection by

62	Fellows
477	Associates
647	Students
970	Probationers
453	Ticket holders
2,609	

The following figures show the growth of the Library in the last ten years:—

	Readers.	Books issued for Loan.
1892	2,642	917
1902	4,375	2,609

REPORT OF THE PRACTICE STANDING COMMITTEE.

The usual monthly meetings have been held, and in addition seven special meetings for consideration of The London Building Acts (Amendment) Bill, all of which have been well attended by the members. The following officers were elected at the commencement of the Session:—Mr. J. Douglass Mathews, Chairman; Mr. S. Flint Clarkson, Vice-Chairman; Mr. C. H. Brodie and Mr. E. Greenop, Hon. Secretaries.

Book on Dilapidations.—The completed book was submitted by the Council to a general meeting of the Institute, and, having been approved, was ordered to be printed and published. This has been done, and the book is now on sale.

London Building Acts (Amendment) Bill.—It having been reported to the Committee that the London County Council had an intention to amend the London Building Act (1894), the Council was asked to approach the London County Council with a view to the Institute having an opportunity of expressing its views on the proposed Bill. This resulted in the London County Council inviting the Institute's comments on their Draft Bill for increasing the safeguards against accidents by fire in buildings, entitled The London Building Acts (Amendment) Act. Seven special meetings were held by the Committee at short notice and the Bill was fully considered in detail. In addition two Joint Sub-Committee meetings were held at 9 Conduit Street with representatives of the Surveyors' Institution. The Committee also conferred with the Committee of the District Surveyors' Association. A report was made by the Committee to the Council, and the Chairman, Mr. J. Douglass Mathews, attended before them to explain the Committee's views. The report was afterwards discussed at a general meeting of the Institute, but on the day following the London County Council decided, owing to the opposition with which it was being met, to withdraw the Bill and to introduce a new measure at a future date.

Form of Architect's Certificate.—In accordance with a reference from the Council, the Committee have had under consideration the production of a form of architect's certificate and have recommended a form to the Council for adoption. They have also suggested that this form might be published by the Institute in book form.

Form of Sub-Contract.—In accordance with a reference from the Council, the Committee have had under consideration the question of the preparation of a form of sub-contract for use between the general contractor and sub-contractors. The Committee are still considering whether it is expedient for architects to be parties to, or to be concerned in arranging, such sub-contracts.

Form of Contract with Quantities.—The preparation of a form and conditions of contract for use where quantities are made part of the contract was undertaken by the Committee and the form is now issued by the Institute.

The opinion of the Committee has been sought on several points of professional practice, and especially a recent case in the Court of Appeal in which a contractor, having undertaken to carry out a building in accordance with the drawings and specification, was held to be unable to recover for loss sustained by admittedly inaccurate bills of quantities.

REPORT OF THE SCIENCE STANDING COMMITTEE.

The Science Committee have held nine meetings since the publication of the last Annual Report. Mr. Thomas Blashill was appointed Chairman; Mr. Lewis Solomon, Vice-Chairman; and Mr. H. D. Searles-Wood and Mr. Max Clarke, Hon. Secretaries.

The proposals of this Committee with regard to the standard size of bricks have been provisionally agreed to by the representatives of the various Brickmakers' Associations. The matter now only awaits the ratification of these proposals by the Brickmakers' Associations. The Committee hope that architects and engineers will insert the standard in their specifications, and so check the serious differences in size of bricks that interfere with good sectional bonding.

The Committee are pleased to report that the suggestion they made, that the administration of the various Acts of Parliament relating to drains old and new should be placed under the Borough Surveyors, has been supported by the London County Council, and they have asked the Council to support the resolution the London County Council sent to the Local Government Board to this effect.

At the invitation of the Institution of Civil Engineers and with the assent of the Council, this Committee was represented upon the Committee of the Engineers for standardising joists, tees, and angles, and they are glad to say that practically every suggestion put forward by this Committee was adopted.

The Committee have made an exhaustive analysis of the mortar used in building the Campanile of St. Mark's, which will shortly be reported on in the JOURNAL.

The Committee have had under consideration the Fire Office Regulations relating to fire-resisting buildings, and prepared a report for submission at the Meeting when Mr. Horatio Porter's Paper on "Fire Prevention" was read.

The subject of the supporting power of rocks and soils, and the strength of materials, is still under consideration.

FINANCES.

The accounts of Ordinary Funds for 1902, prepared by Messrs. Saffery, Sons & Co., chartered accountants, and audited by Messrs. Louis Ambler [*F.*] and W. A. Forsyth * [*A.*], the Hon. Auditors appointed at the Annual General Meeting of 1902, here follow:—

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* The services of Mr. H. S. East [*A.*], the Hon. Auditor appointed at the Annual General Meeting of 1902, not being available, Mr. Forsyth, at the request of the Council, kindly consented to act as substitute.

Income and Expenditure Account of Ordinary Funds for the Year ended 31*st December* 1902.

Dr. Exclusive of Entrance Fees, Final Examination Fees, and Subscriptions in advance. **Cr.**

EXPENDITURE.	£	s.	d.	£	s.	d.
To ORDINARY EXPENDITURE—						
Rent	935	0	0			
Gas and Electric Lighting	101	13	3			
Coals	25	10	0			
				1062	3	3
Salaries				1550	3	8
General Printing, Stationery, Stamps, and Petty Expenses				514	10	5
Expenses of General Meetings, Exhibitions, &c.				261	12	7
Housekeeping (including Office Attendant)				155	19	0
Advertisements in Newspapers				53	11	2
Examination Expenses				387	4	6
General Repairs				109	2	10
Fire Insurance (including new Policy)				50	8	3
Medals and other Prizes				110	3	6
Grants to Library				125	0	0
Grant to Architectural Association				100	0	0
The JOURNAL—						
Reporting	53	11	0			
Printing and Binding	691	16	3			
Illustrations	176	14	10			
Addressing, Postage, and Carriage	248	17	8			
				1170	19	9
The KALENDAR—						
Printing	148	10	1			
Postage and Carriage	27	13	5			
				176	3	6
Contributions to Allied Societies				287	9	6
Coronation Expenses	136	6	0			
Honorarium to Staff	77	1	0			
Miscellaneous (including Dinner)	231	1	2			
				441	8	2
Legal and Accountants' Charges				80	16	3
Balance of income over expenditure				1028	15	0
				£7668	11	4

INCOME.	£	s.	d.	£	s.	d.
BY ORDINARY INCOME—						
Subscriptions—						
584 Fellows at £4. 4s.	2452	16	0			
Ditto, Arrears	46	4	0			
1,000 Associates at £2. 2s.	2100	0	0			
Ditto, Arrears	95	11	0			
Ditto reinstated	12	12	0			
29 Hon. Associates at £2. 2s.	60	18	0			
				4768	1	0
Dividends on Stocks and Shares—						
Architectural Union Co.	184	2	0			
Consols 2¾ per Cent.	51	14	0			
Tasmanian Government Stock 3½ per Cent.	62	7	5			
Dominion of Canada 3 per Cent.	33	16	6			
Queensland Government 3 per Cent.	38	18	7			
Interest on Deposit	28	6	0			
				399	4	6
JOURNAL and KALENDAR—						
Advertisements	641	13	4			
Sales	94	17	5			
				736	10	9
Sale of Publications (other than JOURNAL and KALENDAR)				274	12	7
Use of Rooms—						
District Surveyors' Association	25	0	0			
Architectural Association	7	0	0			
R.I.B.A. Tenants	55	0	0			
Sundries	1	11	6			
				88	11	6
Examination Fees—						
Statutory	32	11	0			
Preliminary	714	0	0			
Intermediate	480	18	0			
Special and Final (forfeited)	149	2	0			
				1376	11	0
Surveyors' Institution (*re* Ancient Lights Bill)				25	0	0
				£7668	11	4

SAFFERY, SONS & Co.,
Chartered Accountants.

Examined with the several vouchers and found to be correct. 24*th March* 1903.

(Signed) { LOUIS AMBLER [*F.*].
W. A. FORSYTH [*A.*].

Balance Sheet of Ordinary Funds, 31*st December* 1902.

Dr. **Cr.**

LIABILITIES.	£	s.	d.	£	s.	d.	£	s.	d.
To Sundry Creditors outstanding							276	13	3
To Examination Fees anticipatory of election							157	10	0
To Subscriptions for 1903 received in advance							96	12	0
To Building Fund							1022	18	3
To Charitable Fund							202	0	7
To *Accumulated Fund*—									
Surplus of liquid assets over Liabilities as per last Balance Sheet				10707	6	9			
Add Entrance Fees received in 1902				382	4	0			
Arrears for 1902 (as per contra)				239	8	0			
Ditto for 1901				4	4	0			
				11333	2	9			
Less Arrears 1901, since received or cancelled	£225	15	0						
Furniture and Fittings bought	234	2	4						
				459	17	4			
				10873	5	5			
Add Balance of Income over Expenditure in 1902				1028	15	0			
							11902	0	5
							£13657	14	6

ASSETS.	£	s.	d.	£	s.	d.
By Cash at Bank				1419	3	11
By *Investments* * *at original cost*—						
Architectural Union Co., 263 Shares	3643	1	0			
Consols 2¾ per Cent. £2000	2037	17	5			
Tasmanian Government 3½ per Cent. Stock £1896. 8*s*. 9*d*.	2050	0	0			
Dominion of Canada 3 per Cent. Registered Stock £1200	1219	11	0			
Queensland Government 3 per Cent. Stock £1643. 9*s*. 1*d*.	1550	0	0			
Consols (Charitable Fund), £200. 10*s*. 2¾ per Cent.	195	14	9			
By *Building Fund*—						
Indian Government 3½ per Cent, £913. 14*s*. 10*d*.	1022	18	3			
				11719	2	5
By *Charitable Fund*—						
Balance due from Trust Account				6	5	10
By Debtors (Rent and Advertisements)				190	8	4
By Subscriptions in Arrear 1901	83	6	0			
Ditto 1902	239	8	0			
				322	14	0
				£13657	14	6

	£	s.	d.
* *Total Investments in* 1901	*10000*	*9*	*5*
Additions in 1902, *viz.*—			
£523. 10s. 2d. Queensland Government 3 per Cent. Stock, cost	*500*	*0*	*0*
Building Fund (as above)	*1022*	*18*	*3*
Charitable Fund transferred from Trust Account	*195*	*14*	*9*
Total Investments as above	*11719*	*2*	*5*

SAFFERY, SONS & Co.,
Chartered Accountants.

Examined with the several vouchers and found to be correct. 24*th March* 1903.

(Signed) { LOUIS AMBLER [*F.*].
W. A. FORSYTH [*A.*].

The Revenue Account and Balance Sheet of Trust Funds for the year 1902, audited by Messrs. Louis Ambler [*F.*] and W. A. Forsyth [*A.*], here follow:—

Revenue Account of Trust Funds for the Year ended 31st December 1902.

Dr.	£	s.	d.	Cr.	£	s.	d.
ASHPITEL PRIZE FUND:—							
To Cost of Ashpitel Prize [C. T. Adshead, *A.*]	10	0	0	By Balance from last Account	16	2	0
To Balance carried forward	20	2	0	By Dividend on 20 Shares, Architectural Union Co., at 14*s.* per share	14	0	0
	30	2	0		30	2	0
CHARITABLE FUND:—							
To Balance due Ordinary Funds	6	5	10	By Balance from last Account	1	2	0
				By Dividends on £200 10*s.* 2¾ per Cent. Consols	5	3	10
	6	5	10		6	5	10
DONALDSON TESTIMONIAL FUND:—							
To Cost of Medals	2	15	0	By Balance from last Account	0	10	11
To Balance carried forward	0	6	7	By Dividends on £72 L. & N.-W. Railway 4 per Cent. Preference Stock	2	10	8
	3	1	7		3	1	7
GODWIN BURSARY:—							
To Cash paid Bursar 1900, 2nd instalment [S. K. Greenslade, *A.*]	40	0	0	By Balance from last Account	87	18	10
To Cash paid Bursar 1902 [C. A. Daubney, *A.*]	40	0	0	By Dividends on £1030 Caledonian Railway 4 per Cent. Debenture Stock	38	13	10
To Balance carried forward	46	12	8				
	126	12	8		126	12	8
GRISSELL LEGACY:—							
To Cash paid Medallist [L. U. Grace, *A.*]	10	10	0	By Balance from last Account	22	6	5
To Cost of Medal	9	18	0	By Dividends on £300 Great Indian Peninsula Railway 5 per Cent. Stock	13	0	10
To Balance carried forward	14	19	3				
	35	7	3		35	7	3
LIBRARY FUND:—							
To Purchase of Books, Binding, &c.	125	7	10	By Balance from last Account	36	5	4
To Printing, Stationery, &c.	1	5	6	By Annual Donation from Sydney Smirke [*F.*]	5	0	0
To Petty Expenses	2	10	1	By Donation from John Parker [*F.*]	10	10	0
To Balance carried forward	56	6	7	By Annual Grant from Ordinary Funds	100	0	0
				By Special Grant (Loan Collection)	25	0	0
				By Entrance Donation 2 Hon. Associates	4	4	0
				By Fines (Loan Library)	4	10	8
	185	10	0		185	10	0
OWEN JONES STUDENTSHIP:—							
To Cash paid Student 1900, 2nd instlmnt. [G. A. Paterson]	50	0	0	By Balance from last Account	243	19	2
To Cash paid Student 1901 [J. H. Rutherford]	50	0	0	By Dividends on £2128 Midland Railway 2½ per Cent. Debenture Stock	50	0	10
To Cash paid Student 1902 [E. Bennett]	100	0	0	By Dividends on £1100 Great Western Railway 5 per Cent. Consolidated Stock	51	14	9
To Extra Prizes	15	15	0				
To Balance carried forward	129	19	9				
	345	14	9		345	14	9
PUGIN MEMORIAL FUND:—							
To Cash paid Student 1901 [H. W. Cotman]	40	0	0	By Balance from last Account	5	15	7
To Cost of Medal	1	11	0	By Dividends on £1070 L. & N.-W. Railway 4 per Cent. Preference Stock	40	8	6
To Extra Prizes	10	10	0	By Balance carried forward	5	16	11
	52	1	0		52	1	0
TITE LEGACY FUND:—							
To Cash paid Prizeman 1902 [W. Fairbairn]	30	0	0	By Balance from last Account	27	2	10
To Balance carried forward	26	16	8	By Dividends on £1150 2¾ per Cent. Consols	29	13	10
	56	16	8		56	16	8
TRAVELLING FUND:—							
To Balance brought forward from last Account	9	13	3	By Dividends on £1000 Madras Railway 4½ per Cent. Stock	42	5	7
To Balance carried forward	32	12	4				
	42	5	7		42	5	7
CATES LEGACY:—							
To Purchase of £1160 N.E. Railway 4 per cent. Consolidated Stock at 128⅜	1504	5	6	By Balance from last Account	7	1	4
To Balance carried forward	29	5	6	By Interest on Deposit	4	13	8
				By Deposit	1500	0	0
				By Dividend on £1160 4 per cent. N.E. Railway Consolidated Stock	21	16	0
	1533	11	0		1533	11	0

Examined with the several vouchers and found to be correct. *24th March* 1903.

(Signed) { LOUIS AMBLER [*F.*].
W. A. FORSYTH [*A.*].

Dr. *Balance Sheet of Trust Funds,* 31*st December* 1902. **Cr.**

	£	s.	d.	£	s.	d.
To Ashpitel Prize Fund:—						
Capital—20 Shares in the Architectural Union Company, Limited, at £14 per Share				280	0	0
Balance at credit of Revenue Account				20	2	0
To Charitable Fund:—						
Balance at credit of Revenue Account due Ordinary Funds				6	5	10
To Donaldson Testimonial Fund:—						
Capital—£72 L. & N.-W. Railway 4 per Cent. Preference Stock				89	0	0
Balance at credit of Revenue Account				0	6	7
To Godwin Bursary Fund:—						
Capital—£1030 Caledonian Railway 4 per Cent. Debenture Stock				1344	13	6
Balance at credit of Revenue Account				46	12	8
To Grissell Legacy Fund:—						
Capital—£300 Great Indian Peninsula Railway 5 per Cent. Guaranteed Stock				513	14	10
Balance at credit of Revenue Account				14	19	3
To Library Fund:—						
Balance at credit of Revenue Account				56	6	7
To Owen Jones Studentship Fund:—						
Capital—£2128 Midland Railway 2½ per Cent. Debenture Stock	1773	0	0			
£1100 Great Western Railway 5 per Cent. Consolidated Stock	1900	12	0			
				3673	12	0
Balance at credit of Revenue Account				129	19	9
To Pugin Memorial Fund:—						
Capital—£1070 L. & N.-W. Railway 4 per Cent. Preference Stock				1342	12	6
To Tite Legacy Fund:—						
Capital—£1150 2¾ per Cent. Consols				1109	1	6
Balance at credit of Revenue Account				26	16	8
To Travelling Fund:—						
Capital—£1000 Madras Railway 4½ per Cent. Stock				1328	8	6
Balance at credit of Revenue Account				32	12	4
To Cates Legacy Fund:—						
Capital—£1160 N.E. Ry. 4 per Cent. Consolidated Stock				1504	5	6
Balance at credit of Revenue Account				29	5	6
				£11548	15	6

	£	s.	d.
By Government and other Securities for total cost value of Trust Funds invested	11185	8	4
By Balance Pugin Memorial Fund	5	16	11
By Cash in hands of Bankers	357	10	3
	£11548	15	6

Examined with the several vouchers and found to be correct. 24*th March* 1903.

(Signed) { Louis Ambler [*F.*].
W. A. Forsyth [*A.*].

The Council submit an Estimate of Income and Expenditure of Ordinary Funds for the year ending 31st December 1903, exclusive of Entrance and Final Examination Fees.

Estimate of Income and Expenditure for Year ending 31*st December* 1903.

EXPENDITURE.	£	s.	d.
Rent, Lighting, and Warming	1080	0	0
Salaries	1577	0	0
General Printing, Stationery, Postage, and Petty Expenses	574	0	0
General Meetings, Exhibitions, &c.	275	0	0
Housekeeping (including Office Attendant)	160	0	0
Advertisements	60	0	0
Examination Expenses	400	0	0
General Repairs	100	0	0
Fire Insurance	29	0	0
Medals and other Prizes	234	0	0
Grant to Library	100	0	0
Grant to Architectural Association and Architectural Museum	121	0	0
Journal	1150	0	0
Kalendar	185	0	0
Contributions to Allied Societies	290	0	0
Album of Portraits of Past Presidents	100	0	0
Miscellaneous Expenses (including Dinner)	165	0	0
Legal and Accountants' Charges	100	0	0
Estimated Balance of Income over Expenditure	1300	0	0
	£8000	0	0

INCOME.	£	s.	d.
Subscriptions and Arrears	4860	0	0
Dividends on Stocks and Shares and Interest on Deposit Account	428	0	0
Sale of Publications (other than Journal and Kalendar)	300	0	0
Journal and Kalendar—			
Sales	100	0	0
Advertisements	825	0	0
Use of Rooms	85	0	0
Examination Fees—			
Statutory	32	0	0
Preliminary	720	0	0
Intermediate	500	0	0
Special and Final (Extra Fees)	150	0	0
	£8000	0	0

REPORT OF THE HON. AUDITORS.

To the President and Council of the Royal Institute of British Architects,—

Having closely examined the accounts of expenditure and income for the year 1902, we have pleasure in reporting that we find that the books of the Institute have been accurately and well kept.

During the year a sum of £1,718. 13*s.* has been added to the invested Capital, which on the 31st December 1902 amounted to £11,719. 2*s.* 5*d.* The Revenue account shows a balance of £1,028. 15*s.* compared with £1,337. 7*s.* in 1901, when there was no exceptional expenditure—a satisfactory result of the twelve months' working in view of the extra expenditure incurred in making additional grants and in various outlays incidental to celebrating the Coronation of His Majesty King Edward VII.

It will be of interest to members to know that the income derived from the investments has now reached a total of practically £400. Seven years ago the income from this source amounted to only £77.

The Building Fund, established in 1901, has had no material increase beyond dividends accruing from the invested Capital. We should like to take this opportunity of reminding all members of the existence of the Fund.

Reference to the statement of income will show that receipts for advertisements in the JOURNAL have increased from £530 in 1901 to £641. 13*s.* 4*d.* This increase is mainly owing to the new advertising contract which came into operation towards the end of the year.

Subscriptions show a larger return, due to the steady increase maintained in the Associate membership.

The Fire Insurance has been considerably extended during the year to fully cover, amongst other effects, the many valuable portraits which the Institute now possesses, for which latter purpose an expert valuation was obtained.

The annual grants were supplemented by donations to the Cretan Exploration Fund, the Coal Smoke Abatement Society, and the British School at Rome, and will serve to show the comprehensive nature of the work of the Institute.

In concluding this report we consider that the satisfactory financial position of recent years is fully maintained in the accounts for 1902.

30th March 1903. (Signed) { LOUIS AMBLER.
{ WILLIAM A. FORSYTH.

DISCUSSION OF THE ANNUAL REPORT.

Mr. JOHN SLATER, *Vice-President,* in the Chair.*

THE CHAIRMAN formally moved that the Report be adopted.

Mr. EDW. A. GRUNING [*F.*] seconded the motion.

Mr. WM. WOODWARD [*A.*] said he thought they would all agree that although the Report showed no very "set-the-Thames-on-fire" progress it did show a satisfactory advance on the affairs of the Institute of, say, ten or fifteen or twenty years ago. Its financial condition and the character of the work got through were certainly improvements upon those days, and he was sure they would all join in thanking heartily the members of the various committees for the good work they had done and for the amount of time they had expended upon the reports and the work of their committees. To go to the financial statement first, the advance in the receipts and the balance in hand showed that by dint of careful economy the Institute had secured to itself a fund which would, he hoped, in a very short time enable the Institute to build its own premises. He was glad to notice that the Report of the Hon. Auditors was published with the financial statement. Some years ago when he was Honorary Auditor on two occasions he fell foul of the Council, because he insisted that the Report of the Hon. Auditors should accompany the Council's Report, so that if the Auditors had anything to say affecting the finances the members would have it before them, and be in a position to speak about it when the Report came on for discussion. With regard to the reference to the Royal Gold Medal on the first page, he should like to say that he thought that when the Council announced the name of its nominee they should at the same time give members some—he would not say eulogy, but at all events some ample description of the works done by him which in their opinion justified the nomination. He was aware that on the second occasion when the nomination was brought forward there was a description given of such works; but that ought to accompany the first intimation, because to all intents and purposes the award of the Royal Gold Medal was the award of the Council. It would be invidious and distasteful for any member to endeavour to substitute some one else for the nominee of the Council, and therefore he thought that on every occasion the nomination should be accompanied by a full description of the works of the architect they proposed to honour. Referring to the examinations, Mr. Woodward said he thought that the examination papers were certainly too much amplified and the examinations on the whole far too stiff. He was also convinced by reading the examination papers themselves, and by conversations with those who had been examined, that the time allotted for many of them was far too short. He remembered when he was connected with the examinations of the Surveyors' Institution seeing the youths with their watches before them, constantly consulting them, knowing that their papers must be completed by a certain time. That must seriously affect the mind of the candidates, and he felt that the examiners should give far more time than they had hitherto done, particularly in the case of the designs and drawings. They as architects knew that a very little indeed would convince them whether or not a youth was fitted to pass through his examinations and to go on to the Associateship. A few words, a few drawings, were quite sufficient. With references to the prizes and studentships, and Mr. Walter Millard's detailed criticism of the works submitted, he had heard Mr. Millard's address, and a more fearless and more useful address to students had never been made in that room. Mr. Millard naturally, and very properly, condemned very many of the designs, and attributed their shortcomings to the want of examination or education on the part of the Institute. But he (Mr. Woodward) did not think that was the basis of the objection. These students, particularly the students in design, were taught to look up to a certain section of the Institute, men who were supposed to lead the art of architecture. It was indeed very difficult to point to any building now in London which did not contain various attributes which deserved only to be termed burlesques upon architecture. The students very naturally copied those works. It would be remembered that in the drawings exhibited there was a general following of the burlesques: the cigar-shaped columns, the broken pediments, and such-like features were all copied. It was not the fault of the Institute examinations at all. It was not the want of education. The Council should take steps to lead the students to think for themselves, to travel, to know what was being done by the best architects of to-day, and not to rely so much upon those ephemeral high-art architects who posed as the leaders of architecture in this country. He himself was satisfied that that could not last very long, and that they would one day return to the days of good architecture—to the days of Pennethorne, the days of the Smirkes, the days of Hardwick, the days of Cockerell. Those, too, were not only the days of good architecture, but the days of good literature connected with architecture. Where did they find now, except in looking at the *Dictionary of Architecture*, the literary work which was characteristic of those days? The Institute had lost a great literary man—he meant lost because he had not been at the Institute for some time—in Professor Kerr. Reading the articles of the Smirkes, Pennethorne, and men of that class, they would find that the literary character of the contributions was far more refined and far more agreeable to read than the effusions of the architect writers of to-day. With regard to the Premises question, he quite agreed with the Report that it was wiser to wait for a favourable opportunity of securing a site. The Album of Photogravure Reproductions of the portraits of Past Presidents was also an excellent proposition, which he was sure they would all agree to. It would be a most interesting work to possess. So far as the intrinsic value of many of these paintings went, doubtless if they were put up at Christie's they would not fetch a twentieth part of what the Institute valuers put for them—the only purchasers probably would be relatives. Then there was a reference to the Book of Dilapidations by the Practice Committee. When he first heard of this book he thought it might be as injurious to the profession as such works as *Every Man his own Lawyer*, for instance. "Every Man his own Surveyor" might lead to many difficulties; but on reading the book he did not think any danger was likely to arise on that score, and he thought the Practice Committee were deserving of their very highest thanks in connection with it. It would be very useful indeed to surveyors. Of course they all knew that the covenant in the lease was the true basis of action, but the Committee's book might lead to the avoidance of much litigation. Then there was a reference to the London Building Acts Amendment Act. They were all delighted to know that the recent Bill was withdrawn. It was drawn up in a very hurried manner, and was as incomprehensible as most documents drawn up by lawyers were. He thought that the time had arrived when the whole Act of 1894 should be looked into. They had several years' experience of the working of the setting back both of the front and rear of premises, and of the injurious effect of the angle of 63½ degrees, not only upon the pockets of the building owners, but upon the beauty of the architecture. That section of the Act required very material modification, and if the Act was to be amended he trusted that many sections, other than the sections relating to safeguards from fire, would be thoroughly overhauled, and many of them wiped out. With regard to the registration of architects, referred to in the Report, that question had been before them since the formation of the Society of Architects—indeed, the *raison d'être* of the Society of Architects was this question of registration. From the very first he had been, rightly or wrongly, a supporter of registration. The Council, in the Memorandum printed in the JOURNAL for the 4th April, said that architecture was a liberal art, akin to the art of the painter, the sculptor, and the musician. But that was not so. The architect had to carry out works which might affect the health and the safety of the public. They could not compare the architect with a sculptor or a painter. If a man purchased a painting or a piece of sculpture and did not like it he could get rid of it. But it was a very different thing to dismiss in a word a man's residence, which had cost, perhaps, £10,000 or £20,000. The question affected the health of the public, and therefore there was no just comparison between the work of the painter and sculptor and the work of the architect. The whole object of registration was to prevent a man who had not the slightest acquaintance with architecture from practising as an architect. There were many clerks of works, very respectable and able men in their line, but surely it should not be within their province to put a brass plate on their doors and call themselves architects. Men practised who knew nothing whatever about architecture; they got work from the public, and erected buildings which were unhealthy and insecure, and might be a lasting disgrace to them and a great drawback to the profession in general. He could never understand why the Institute objected to registration. The Society of Architects had offered, time after time, to place practically the whole thing in the hands of the Institute. They wished the Royal Institute of British Architects to be the authority, and he could never understand why the Institute should go out of its way, as it had done in the circular recently sent out to the Allied Societies, to oppose the scheme. He felt convinced that some form of registration would be conducive to the interests of the architect, and for the benefit of the public in general. With regard to Vauxhall Bridge, the action of the Institute and various members was almost amusing. In *The Times* three gentlemen—two of them members of the Institute—indulged in very severe terms with reference to the London County Council and its design for Vauxhall Bridge, and they suggested very plainly indeed—at all events two of them did—that their object was, not only to secure the architect and the engineer working together to produce a good design, but also to get an architect appointed from outside to collaborate with the engineer. Now the Council congratulated themselves upon this marriage of the architect and the engineer, and the London County Council had done what no doubt they always intended to do—they had appointed their own architect, who was a Fellow of the Institute. There was a reference in the Report to the President's "At Home." He had been present on that occasion, and had never had a more enjoyable evening in his life. It was a splendid idea: it was done without affectation; they were allowed to put on plated harness or not as they chose. It was altogether a delightful evening, and he was very sorry indeed that he should not be able to be present next Monday. Their thanks were due to the President for the idea, and the excellent way in which it was carried out. Coming to the Report of the Literature Committee, he thought that the Librarian's Report must give every member who read it distinct satisfaction, showing as it did that the attendances of readers had increased during the year from 3,889 to 4,375, and the borrowers from 2,132 to 2,609. That showed a very satisfactory progress in the way in which the students regarded the Library of the Institute; and in saying that, he thought that thanks were due to the Librarian for the courteous way in which he always discharged his duties. He wished finally to make one or two general observations. First, he should very much like to see a better attendance of the members of the Council on every occasion. Take that evening for instance: they had before them the Annual Report of the Institute, the only means members had of knowing what the Institute had done during the year; yet how few members of the Council were present. He should also like to see the younger members taking part more than they did in the discussions. There was distinct encouragement from the Chair, and always had been, for the young members to join in the discussion. And he should like to see them get up and speak—no matter whether they made blunders or not. He would remind them of what the President of the United States said, the man who never made a mistake never made anything. In conclusion, he thought the Report on the whole showed a very distinct and very satisfactory advance in the affairs of the Institute, and he begged to tender his tribute of thanks to the members of the various committees who had done so much to bring the Institute to such a satisfactory state.

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* In taking the Chair Mr. Slater stated that he was desired by the President to express his regret that a long-standing engagement had prevented his being present at the Meeting that evening.

Mr. E. W. Hudson [*A.*] said he should like to add his tribute to Mr. Woodward's peroration as regards the progress of the Institute and the thanks which were due to the Council and the Committees for the work of the past year. As regards new premises, he was sure they were all delighted that there was a nucleus from which some day or other their premises might be either enlarged or acquired, or in some other way that they might have a finer home of their own. As regards the Royal Gold Medal, when it was proposed to confer it on a foreigner he quite agreed that it was advisable to have a biographical account and some description if it were not possible to have photographs of the works he had carried out. He believed that they did have the desired particulars when Mr. McKim's name was proposed, and he thought the Institute was to be congratulated upon the fact of having selected an American architect for the honour of the Gold Medal this year. It would tend towards cementing the friendship between the two countries, which they were glad to see had advanced to its present state, and which they were all most wishful to extend. Mr. Woodward had complained about the stiffness of the examinations. But as the candidates were allowed to come up a second time it would be a pity if the standard of the examinations were reduced. Was it not better that candidates should feel that it was a stiff examination, and that they should brace themselves up like true Englishmen to face it and get through with it? Already, difficult as the examinations might be, there were some 2,346 names upon the books of Students and Probationers. To his mind that was a source of anxiety as well as a source of satisfaction. What was to become of all those young men when they came into practice? Where were they to get their clients from, to enable them to obtain a substantial living? He did not agree that the examinations should be in any way simplified. With regard to the criticism by Mr. Millard, he felt that although it was a most healthy criticism on the whole, it did seem a little drastic, and in that he differed from Mr. Woodward; he thought there was not quite so much encouragement for those young men as might have been given by so experienced a critic. They were all glad to know that the portraits of their distinguished Past Presidents were to be reproduced by photogravure: nothing would be so interesting to them as such an album. With regard to the value of the portraits he did not agree with Mr. Woodward. They were justified, he thought, in putting down a value far more than his ideas of art were likely to fix. The registration question was a very moot point, and would take too long to go into then; but he was not at all satisfied that it was a desirable thing that anyone who now came forward and claimed to be an architect without any examination, possibly without any qualification, should be at once branded or ticketed as a fully fledged architect. That seemed to him inevitable: with registration they could not cut out anybody who now claimed to be an architect, and he did not think that it would be conducive to the best interests of the profession. The Journal still held its own, and he thought it was justly entitled to the encomiums passed upon it by their foreign Associates; it was held in very high esteem on the Continent as well worthy of the Institute. He was very pleased to see that there was a large amount put down for sales. It was very satisfactory that there was so large a demand for their publications outside the members of the Institute. It was a matter of satisfaction, too, to see the lists of assessors who had been appointed by the Institute at the request of committees having large works to carry out; it was a guarantee that the principle of competitions of this kind was taking a phase which marked an improvement upon what had hitherto been. Not only, too, had suggestions been sent to committees in Great Britain, but they had gone as far as South Africa, and he had reason to believe that it had not been without appreciation and acceptance in those quarters. He was rather surprised but was pleased to learn that the proposal to standardise the bricks used in this country was likely to be adopted. When he attended the meeting at the Agricultural Hall there seemed such divergence of opinion amongst brick-makers that it seemed not at all likely to come to a successful issue. He did not know why the Science Committee had taken that particular interest in the analysis of material from a Continental building, but it seemed to be a quite justifiable departure, which might lead to other exhaustive inquiries of the same nature. In connection with the number of Students and Probationers, it seemed to be a good source of revenue to the Institute: Something like £1,000 apparently accrued to the Institute as the net result of the examinations. It was also a matter of satisfaction that the fire insurance had been increased, not only upon the valuation of the Institute's officials, but on expert valuation of their pictures from outside. Possibly they might be allowed to know what that valuation amounted to. He did not know whether any result would be given as regards the Coal Smoke Abatement Society, who had brought forward for discussion in that room the question of the advantages of certain grates. He did not know whether anything had appeared in the JOURNAL about the results of inquiries, but it would be of interest if something of the kind could be given.*

Mr. H. H. LANGSTON [*A.*] said that last year he referred to the fact of Mr. Spurrell having represented the Institute in Eastbourne at the Congress in 1901. The Chairman stated that he believed that Mr. Spurrell attended, and reported that he had attended, and that was all. It was also stated in the Report of last year that the present Chairman (Mr. Slater) and Mr. Blashill would represent the Institute at the Annual Congress of the Sanitary Institute to be held in Manchester. Perhaps the Chairman might tell them something about it at the present meeting. He supposed those gentlemen who were appointed to represent the Institute went at their own expense, and at the cost of their own time; and if that was so, the least the Council could do in their Report was to express some thanks for the time they had given and the expense they had incurred. If the Institute had paid their expenses, which it would not be at all an unreasonable thing for the Institute to do, then certainly members were entitled to some information as to what they had done. He ventured to hope that next year some answer would be given to the point he was raising now. When he saw the names of Mr. Edwin T. Hall and Mr. Thomas W. Cutler—he did not think Mr. Hall would allow a proceeding of that kind to pass without an observation of some kind being made by him. Then Mr. Alfred Culshaw had been appointed to represent the Institute at the Annual Congress of the Royal Institute of Public Health to be held in Liverpool. These statements of nominations of members to represent the Institute at the different Congresses were made year after year. But members saw nothing as to whether their representatives attended or what was done. Why was it put in the Report at all if it was not to give members an intimation that their representatives had done some good or given some information at these Congresses representative of the opinion held by the Institute on matters discussed at those meetings? As regards the accounts. On page 49 of the Supplement there was an item, "Legal and Accountants' Charges £80 16*s.* 3*d.*" Last year it was £15 4*s.* 2*d.* It was such a large increase that perhaps the Chairman would be able to give some explanation of it.

Mr. DOUGLASS MATHEWS [*F.*], quoting the statement in the Report about the Light and Air Bill, that the matter was in the hands of Mr. Fletcher Moulton, who had undertaken to introduce the Bill into the House, asked if any time had been fixed for its introduction. Mr. Fletcher Moulton was in hopes of introducing it at the beginning of last Session, but was too late; and unless some immediate steps were taken he was afraid they had little chance of its getting before the House this Session. He hoped that the matter would not be allowed to drop. With regard to the sale of publications of the Institute, he thought that there were two or three of the publications which ought not to be quite so high-priced as they are. The Schedule of Professional Practice and Charges, he believed, used to be published at 3*d.* Now, for some reason, it had been advanced to 6*d.* The Schedule should be published at cost price to the members in any case; and if any parties outside wished to have it, let them pay the 6*d.* if they pleased. But all the members should provide themselves with the Schedule of Professional Practice, and copies should be supplied at cost price, and not at a fancy price. The difference in the return, he thought, would not be very serious. The same remark applied to the Schedule of Conditions of Building Contracts. They were published at a shilling. That was not quite so extravagant, but even there he thought a difference should be made in the amount charged as between members and non-members of the Institute. Again, for the notices and forms under the Building Act the Institute charged 3*d.* each; but elsewhere similar notices could be got for 1*s.* 6*d.* a dozen.

Mr. EDWIN T. HALL [*F.*] said that personally he sincerely hoped there would be no reduction whatever in the price of the Institute publications. These documents were prepared with great labour, at great cost, very frequently with the help of solicitors and others. The Conditions of Contract which were sold at a shilling produced an income to the Institute of nearly £200 a year, and it would be a thousand pities to lose that. They got it back into their own pockets even if they paid it; but it was the cheapest document they could buy anywhere; a document that, if they wished, they were perfectly correct in charging their client for. It was a document which, if they asked their client's solicitor to draw up, he would charge £10 for; therefore he sincerely hoped it would not be reduced. The same applied to the other publications. The publications of the Institute were getting to be a source of great value. He hoped it would go on increasing, for it would be from that and other things that they should get their building fund increased. With regard to the Schedule of Charges, that was the result of the labour of a committee over which Mr. Douglass Mathews now presided, and it was a very cheap document at the price charged for it. Coming back to the Report, he should like to say a word about the clause announcing that a certain power in a by-law was about to lapse [p. 350]. The words in the by-law ran: "Provided always that when the Council of the Institute receive a unanimous recommendation, formally submitted by the Council of any Allied Society, that a practising member of the profession is eligible and worthy of being elected as a Fellow, the Council shall, during the five years from the date of approval of this provision by the Privy Council, have power to elect him, if in their opinion his work be of sufficient merit." That proviso was expiring. He felt sure it would be the desire of every member of the Institute that it should be renewed. It gave a power—it gave a privilege if they pleased—to the Councils of the Allied Societies. There were in many important towns in the country gentlemen of mature age in practice who dared not submit themselves to the risk of a ballot; and if their local Council held them in such repute that they unanimously recommended them to the Institute, it was very desirable that they should be enabled to come forward. He hoped that in due time a notice would be given of an application to the Privy Council to renew this by-law. A question had been raised as to registration. It was rather a big subject, and he did not know whether it was wise to raise the discussion there. Members wanted to have a clear notion of what they were thinking about and what they were voting on, if they had to discuss the subject. At present the only scheme of registration submitted to Parliament was that a man should not use the name of architect. He was sure Mr. Woodward would say that was a perfectly inadequate protection. No Bill had yet been presented to Parliament which said that no one should design a building unless he was a registered architect. That had never been suggested by the Society of Architects or by anybody. The suggestion was that if a man used the word "architect" he must be registered. What would follow? He would not use the name of architect, but would go on practising exactly the same. In whose interest was this legislation to be? Was it to be in the interests of the public or those who were practising? If it were in the interests of the public Parliament would pass it. Would Parliament ever pass a Bill which said that the only protection was that the man who practised was not to call himself an architect? Because that was what the Bill proposed which was before the House last year. That was absurd. Would Parliament say that no layman should be the architect of his own house? It was too absurd to contemplate; they would never do such a thing. If they said that a man should not be architect to a house, then they prohibited any private person from building anything that could be called a house unless he was called an architect. No one could build a pig-sty—at all events not a residence. If it was that they were trying to protect themselves for their own profit, the Legislature would never listen to them. The Legislature would have to be shown that a public good was to be derived, and that public good would never be derived by simply barring a man from using the title "architect."

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* Some particulars of the experiments on smoke-abating fire-grates carried out by the Coal Smoke Abatement Society were given in the JOURNAL for 31st May last year, and members were referred to the *Lancet* of 10th May 1902, where the tests were exhaustively described and illustrated.—ED.

Mr. Silvanus Trevail [*F.*] said he had listened with very great interest to the remarks which had fallen from the last speaker, and he noticed that he built up an argument in order to knock it down. Their idea of registration was quite different from what Mr. Hall represented it to be. Registration was for the protection of the architect and for the protection of the public. It was for the protection of those who practised the art and the science of architecture. The Society of Architects was not in antagonism to the Royal Institute; if it were, he would not remain a member of that Society. He was very sorry to hear this talk, emanating as it did, he was afraid, from a very small group of men, because he knew that outside that small group there was no feeling of antagonism at all.

Mr. Hall asked if Mr. Trevail would explain what was meant by the Registration Bill.

Mr. Trevail said that the object of the Bill was to compel recognition by the Legislature of those who were properly qualified as architects. The Bill was quite open to be altered in Committee. Of course it would never be passed exactly word for word and line by line as it was introduced. There would be ample opportunity of dealing with it when it came before Parliament, and he had not the slightest doubt that proper weight would be attached to any representations made by the Institute, the senior body of the profession. The aim of the Bill was to register those who were properly qualified to practise architecture, and if that was done a great point was gained in the interests of the profession. With regard to what Mr. Hall said, that a man might not build a pig-sty unless he was an architect, the promoters of the Bill would reply that he might build a pig-sty or a mansion if there were fools enough to employ him. He contended that a great benefit would be gained to the profession if they could point to a list, as the physicians and the lawyers could, and say that those were the names of men who were registered as being properly qualified. They did not say that others should not build. What he believed would happen would be the same in this country as in other countries, that if those who wished to practise were not in the recognised list the public would not employ them. The objectors to the Bill said that any man who called himself an architect would have a right to be registered. But nothing of the kind was contemplated. The Bill gave the Royal Institute the preponderating influence in saying who should be registered. There were two representatives of the Royal Institute against one of any other body. If the Bill were not clearly conceived, then they could have their say upon it when it came before Parliament. One thing he could tell them: there was a majority of the entire profession in favour of registration. What was more, there was a majority of members of the Institute in favour of it. How far did the Council of the Institute represent the whole body of the Institute on the subject? He had sufficient work to keep him pretty fully employed, but he was quite prepared to put himself up as a target to be shot at and to run his chance for election on the Council on this question of registration, so as to test the question whether the majority of members wanted registration or not. If there were gentlemen present prepared to nominate him for election, he was prepared to put himself up and subject himself to being fired at on this question. They would not be fair to the general body of the profession unless they allowed an opportunity of that kind, so that they might express their opinion on registration. It was all very well for a small coterie of men—good men as they were, no doubt—to have set opinions upon it; but surely the entire membership of the Institute had a right to an expression of opinion upon it. He did not want to be controversial. He wished to put the Royal Institute in the forefront. He would like to see the Royal Institute taking its proper position. But if the Royal Institute would not, others would; that was what it came to. He hoped that they would not regard this as being at all unfriendly to the Royal Institute. He was a loyal member of the Royal Institute, and wished to remain a loyal member, and he knew that what he was saying now was in the real interests of the Royal Institute.

The Chairman (Mr. Slater) said he would in as few words as possible reply to the criticisms that had been made. With regard to the progress of the Light and Air Bill, which it had been announced would be promoted in the House of Commons by Mr. Fletcher Moulton: only that day a letter had been received from Mr. Fletcher Moulton's secretary to say that the matter had not been lost sight of, and he hoped to send the Institute some communication about it in the course of the next few days. With regard to the publication or announcement of the works of the gentleman who had been recommended by the Council, and approved by the Institute, for the Royal Gold Medal, it was quite true that this list of his works might have been ready by now, perhaps; but before he received the Gold Medal the Institute would be fully informed upon the work he had done. Mr. Woodward's remarks upon the examinations were, he thought, not quite called for. He (the Chairman) had had experience of examinations, partly as examinee and partly as examiner, for the last forty years, and he had never yet known an examination of any kind, University or otherwise, to which some objection could not be taken. It was true that the time allowed for the examination was limited; but such limitation was an absolute necessity, and could not be avoided. With regard to the subject of design, the Board of Examiners had done everything they could to help the candidates. For the last few years they had always announced to the candidates, some weeks beforehand, the subject upon which they would be required to send in a design, so that they might not come into the examination-room in total ignorance of what they would be called upon to do, but would have had time to consider the subject and to form an idea of what they were going to design. He did not think that in an examination of this kind they could do more than that. With regard to what was to be done with the large number of candidates on their books now, either as Probationers or Students, he confessed he could give no satisfactory answer. He could only say this, that his view, and he believed the view of his colleagues on the Board of Examiners, was that they ought to try and stop people from coming in, as students of architecture, at the very earliest stage if they showed no special inclination to its study or pursuit. For that reason the Preliminary Examination was of the greatest possible value, because if a man showed in that Preliminary Examination that he was practically ignorant of the rudiments of education it was quite certain that he was not the sort of man they ought to encourage to enter the profession. As regards Mr. Millard's remarks upon the students' drawings he was quite sure that the stringent criticism was meant to be helpful—and he believed it was so regarded by the students themselves. With regard to the portraits, they had had an actual valuation of them by a skilled expert, and one, at any rate, of the portraits was valued at as high as 2,000*l*. As regards the vexed question of registration, he did not think it would be competent for him, in the absence of the President, to say anything on the subject. Mr. Woodward's remark, that he did not see why they should have put in the JOURNAL the memorandum that had been sent to the Allied Societies, he thought was met by the answer, that the Council, whether rightly or wrongly, considered that members ought to have some notion as to what their views were on the subject, and that was the reason why publicity was given to it. With regard to the remarks of Mr. Woodward as to Vauxhall Bridge, he seemed to put up an effigy in order to knock it down again, because he admitted that the architect of the London County Council was fully as able as, or perhaps more so than, any other architect who might be named, to collaborate with the engineer. What the Council said was, "The principle of the association of engineer and architect in bridge-building, which they have so long urged, has thus at last been admitted by the London County Council." With regard to what Mr. Langston had said as to the Congress at Manchester, he was glad to be able to inform him that he did attend, that he took part in some of the discussions, that he reported to the Council the result of his visit to Manchester, and that that report was among the archives of the Council. He knew of no particular reason why it should not have been referred to in the Report, except that he supposed the Council thought that the subject was hardly of sufficient importance. With regard to Mr. Langston's question as to the increase of the expenditure connected with legal and accountant's charges, the increased expenditure was for legal services in connection with the form of contract, the book on Dilapidations, the Ancient Lights Bill, and the new advertisement contract. As would be noticed, they had obtained a much larger sum for advertisements in the JOURNAL and Kalendar, and those advertisements were the subject of a legal contract between the Institute and the advertising agents. Those were legal costs arising in the ordinary course of business, but which it was hardly necessary to detail. As to the price of the Institute publications, Mr. Hall had, he thought, sufficiently answered that, and he could only say that the question of the price of these publications had been considered by the Council, and that as at present advised they saw no reason for making any reduction. He regretted the small attendance that evening, but with regard to some members of the Council he knew that it was quite unavoidable. They had listened with great interest to the criticisms and remarks which had been passed upon the Report, and he was quite sure that these criticisms would be received by the Council in the spirit of trying to benefit by them, and to profit by them in another year.

[The motion for the adoption of the Report was then put from the Chair, and agreed to, *nem. con.*]

THE CHAIRMAN then moved a vote of thanks to the auditors, Mr. Louis Ambler and Mr. Forsyth, for their services in auditing the accounts. In conclusion, he said that, although it was not down among the list of things that he had to do, he was quite sure he should be only expressing the views and opinion of the whole body of the Institute if he asked them to pass a very sincere vote of thanks to the staff of the Institute, the Secretary, the Assistant-Secretary, the Assistant Editor, the Librarian, and all the clerks, for their strenuous services to the Institute in the past year. He did not think anyone who had not sat on the Council could have the least idea of the amount of work that was done by the staff of the Institute; and he was quite sure that the thanks of the Institute were due to them. He need not say that members thoroughly endorsed the vote of thanks to the Auditors.

MR. LOUIS AMBLER [*F.*], speaking for himself and for his colleague, Mr. Forsyth, said they were very much obliged for the kind way in which the Meeting had received the proposal of the vote of thanks. They both appreciated it as a great honour to be asked to act as auditors, and they had had great pleasure in acting.

MR. DOUGLASS MATHEWS [*F.*] said he had very much pleasure in seconding the vote of thanks to the officers. He was not on the Council, but he had had the pleasure of seeing the officers on many occasions in the past few years, and it gave him the greatest pleasure to confirm all that the Chairman had said as to their ability and kindness and the way in which they discharged their duties.

The SECRETARY thanked the Chairman for the kind way in which he had referred to the services of himself and the staff. His position when he came to the Institute six years ago was rendered a very easy one by the cordial and thorough way in which the whole staff received him, and he acknowledged with pleasure the loyal and efficient help that they continued to give him at the present day.

The CHAIRMAN then proposed that Mr. Louis Ambler and Mr. Forsyth, who had acted as Auditors last year, be requested to serve for another year. He was quite certain, if they would do so, they could not leave the matter in better hands. In fact, he was by no means sure that it was advisable to change the auditors every year, because they had some sort of insight into the working of the Institute, and it was a great advantage to have them for a couple of years. As regards the appointment of scrutineers for the annual election, as they had such a small attendance he thought that the better plan would be, as had been done on previous occasions, to leave the selection of the scrutineers to the Council. [This the Meeting agreed to.] As to the next business, the appointment of the Statutory Board of Examiners for the ensuing year of office, the old members, he believed, were all willing to act again, and, unless anyone present had any new name to propose, he would propose that the outgoing Board of Examiners for the Statutory Examinations be reappointed.

The proposal having been agreed to, the business of the Meeting was concluded.

INCORP.
1837
1887

9, CONDUIT STREET, LONDON, W., *9th May* 1903.

CHRONICLE.

The Prime Cost Clause in the Conditions of Contract.

The attention of the Council has been drawn to a not uncommon practice in certain parts of the country for architects to disregard the Prime Cost Clause (No. 27) in the Institute Form of Contract, and to allow builders the large and varying discounts to which merchants' prices are frequently subject, to the detriment of clients' interests. It having been the policy of the Institute to clear the ground between architect and client of every possibility of doubt as to open dealing on the part of the builder, the Council cannot but deprecate this laxity, and they urge architects to enforce rigidly the Prime Cost Clause for the sake both of uniformity of practice in the profession and the maintenance of the important principle the clause involves.

New Nominations to the Council.

The following nominations to the Council have been made by Fellows and Associates conformably with By-law 30 :—

FREDERIC RICHARD FARROW—nominated by T. Edwin Cooper, Alfred W. S. Cross, H. Phillips Fletcher, E. Swinfen Harris, S. B. Russell, *Fellows*; Banister F. Fletcher, N. C. H. Nisbett, *Associates*.

WILLIAM MILNER FAWCETT, M.A. Cantab., F.S.A., *Past Vice-President*—

ERNEST GEORGE, *Past Vice-President, Royal Gold Medallist*—

JOHN WILLIAM SIMPSON—

nominated by Frank Baggallay, James S. Gibson, J. A. Gotch, Alex. Graham, Geo. H. Fellowes Prynne, John Slater, *Fellows*; E. W. Wimperis, *Associate*.

CHARLES HENRY HEATHCOTE—nominated by T. Edwin Cooper, Alfred W. S. Cross, F. R. Farrow, C. E. Mallows, S. B. Russell, *Fellows*; C. E. Hutchinson, Ernest A. E. Woodrow, *Associates*.

SAMUEL PERKINS PICK—nominated by T. Edwin Cooper, Alfred W. S. Cross, F. R. Farrow, Stockdale Harrison, S. B. Russell, *Fellows*; J. S. Harrison, C. E. Hutchinson, *Associates*.

SAMUEL BRIDGMAN RUSSELL—nominated by T. Edwin Cooper, Alfred W. S. Cross, C. E. Mallows, Herbert Wigglesworth, *Fellows*; Henry A. Crouch, C. E. Hutchinson, Ernest A. E. Woodrow, *Associates*.

SILVANUS TREVAIL—nominated by Alfred W. S. Cross, H. Phillips Fletcher, W. H. Knowles, John Murray, *Fellows*; Banister F. Fletcher, H. H. Langston, Wm. Woodward, *Associates*.

The Sixth International Congress of Architects, Madrid 1904.

The particulars of the Sixth International Congress have been sent to the Institute by the Organising Committee in Madrid.

By Royal Decree, dated February 18th, 1903, and with the support of the Government of His Majesty the King of Spain, it has been decided to hold the Sixth International Congress of Architects at Madrid in April 1904, conformably with the resolution passed at the final sitting of the Fifth International Congress, held at Paris in 1900.

The Congress will be held from the 6th to the 13th April 1904, and will comprise papers, discussions, excursions, and a farewell banquet on the 13th.

Any person interested may become a member by paying a minimum contribution of 25 francs as a subscriber (*membre adhérent*), or of 100 francs as a donor (*membre donateur*). The privileges of each class of membership are identical.

The subjects chosen for consideration at the Congress are as follows :

1. L'Art Moderne (or what is so termed) in architectural work.

2. The Preservation and Restoration of Ancient Monuments.

3. The character and scope of scientific studies in the general training of the architect.

4. The influence of modern processes of construction on artistic form.

5. Artistic Copyright in architectural works.

6. The training of workmen.

7. The influence of administrative regulations on contemporary private architecture.

8. The expropriation of works of architectural art.

9. Is it desirable that the architect should be made to intervene as arbitrator in the regulation of the relations between masters and workmen, and in the disputes that arise between them ?

Of these subjects some are new and others, such as Nos. 2, 5, 7, the discussion of which was not completed at the Paris Congress of 1900, have been recommended by the Permanent International Committee.

All communications relating to the above subjects must be drawn up in French and addressed to "The Secretary of the Sixth International

Congress of Architects, Academia de Bellas Artes de San Fernando, Calle Alcalá 11, Madrid," before the 30th September 1903.

The Secretary of the Institute will be pleased to send any member interested in the Congress a copy of the preliminary notification containing such further details as have hitherto been arranged.

The late Achille Hermant.

Monsieur Achille Hermant, who has just died at the age of eighty, was one of the most venerable figures in the world of Paris architecture. A pupil and Medallist of the Ecole des Beaux-Arts, he executed many important buildings in Paris, and was the author of several critical works dealing with architecture. He was very closely connected with the working of the Société Centrale des Architectes Français and with the various movements in France for improving the position of the architect. His son, M. Jacques Hermant, was the author of the Palais des Moyens de Transport in the Paris Exhibition of 1900, an original design for which he lent M. Ch. Lucas for his Paper on the subject,* and which is now in the possession of the Institute. M. Achille Hermant had been an Hon. Corresponding Member of the Institute since 1885. At the Institute Meeting last Monday an expression of regret for the loss the Institute and the Société Centrale have sustained by his death was ordered to be entered on the Minutes, and a vote of condolence was passed to his family.

MODERN HOSPITAL VENTILATION.

Mr. William Henman [*F.*] sends the following correspondence for publication :—

28th April 1903.

Dear Mr. Hall,—I have studied with very great interest your Paper on "Four Modern Hospitals" published in the Institute Journal, and consider it an important contribution to the subject of hospital design and construction, which I believe we are both anxious to advance on scientific lines.

You may not, therefore, consider it presumptuous on my part to make a few remarks and ask for explanations on some points referred to in your Paper, and in your reply to the discussion, inasmuch as I was unfortunately prevented from being present on the occasion of the Paper being read and discussed.

Towards the end of page 315 you mention having seen "plans of a large hospital containing many wards over 100 feet long separated only by division walls, lighted by skylights except for an end window in each ward," than which, you state, nothing can be more depressing for a patient. May I ask if you thus refer to my design for the Belfast Royal Victoria Hospital? Because the description seems to apply, only that the wards are under 60 feet in length, and there are no skylights, but lantern or clerestory lights the length of the wards; and although when I first propounded my scheme it was thought by some that the wards would lack cheerfulness, now that the building is erected it is acknowledged on all hands that they are most cheerful and comfortable in appearance.

Throughout your Paper you properly lay great stress upon the thorough aëration of all parts of a hospital, and lay down your views, if you will excuse me saying so, somewhat dogmatically on the subject of ventilation condemnatory of the "Plenum" system.

On page 330 you state: "When a current of fresh air was available it seemed madness to go to the expense of pumping in air through flues which necessarily became ultimately foul." With my experience I consider this is altogether begging the question. In the first place you assume that a current of fresh air is available. But can that at all times be assured? And with slight attention there is no reason why the flues and ducts should become foul.

Then a little further on: "If fresh air can be made to come in in the way it is designed to come and to be cleansed as it comes in." May I ask, when all the many changes of the outer atmosphere, both as regards its temperature, humidity, and the varying force of wind, are taken into account, how is it possible to make it come in as desired, and by what means can it be cleansed as it comes in?

These are vital questions in connection with ventilation, and require a clear and comprehensive answer before anyone can pronounce an opinion upon the "Plenum" or any other system.

Then I find in connection with Camberwell Infirmary, page 323, you refer to "electric ventilation" as being provided. May I ask what electric ventilation is?

Later, on page 324, I see you refer to electrically driven fans with upcast flues and trunks, implying that the air is thereby extracted. Have you ascertained whence that air is sucked? You have sanitary turrets without cross-ventilated cut off lobbies. Have you convinced yourself that none of the air sucked up by the electrically driven fans will ever be drawn in from those sanitary turrets or from any other objectionable sources? Is the incoming air in any way cleansed or filtered before being admitted to the wards? And, as you have fireplaces in and smoke flues from the wards, are you assured that at no time some of the incoming air may not be drawn down such flues into the wards by the extracting power of the fans?

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* Journal R.I.B.A. 24th February 1900.

Also on page 325, referring to the Home (for nurses, I presume), you state: "There are open fires only in the sitting-rooms." The question arises how ventilation is secured in the numerous sleeping rooms for nurses.

On page 318 you state: "The heating is by passing fresh air over hot-water radiators at a calculated low velocity, so as always to be changing the atmosphere of the room, and this is done completely three times per hour." That sounds very plausible; but those who examine these matters scientifically will naturally ask, Are you sure you get "fresh air" at each of the numerous inlets you must have throughout the hospital?

In what way is the velocity of the incoming air calculated, and how, with varying pressures of wind outside, is it regulated? How do you determine that the air of the ward is changed three times per hour? And, lastly, can it be proved that such change of air takes place equally throughout all parts of the buildings?

If you are able to give satisfactory answers to these questions, which I feel sure you will agree with me strike at the root of a correct definition of efficient ventilation, you have solved points which hitherto have puzzled all who aim at employing either extraction or natural means for ventilation, even with the assistance of heat as an important factor in the case. But then summer ventilation has to be considered, when heat from fires, hot-water pipes, and radiators cannot be employed.

Doubtless you will say windows can then be freely opened; but there are days in the summer when in hospital wards the temperature is even higher than it is outside, yet in the open it is often unbearable. What is to be done then?

As an advocate for the "Plenum" system intelligently applied, I may inform you that experience extending now over several years has proved the following among other things:—

1. It can be carried out, combined with heating when that is required, quite as economically as any other system, not excepting the so-called natural system.

2. The air admitted to the buildings is drawn from a known source away from all contaminations, and it is cleansed and brought to a suitable hygrometric condition. It must be patent to everyone that, whatever change of air takes place in a building, an equal quantity of dirt must come in with an equal volume of air: consequently, if more dirt shows itself with the "Plenum" system, the air being then partially cleansed by moistened screens, it is proof that a far greater change of air takes place within than by other means when less dirt is noticeable.

3. The supply can be regulated in volume to a nicety, a change in summer of ten times and in winter of seven times per hour being the minimum provided.

4. By a little care in the arrangement of the inlets and outlets change throughout all internal portions of the building can be assured; and this is proved by the fact that thermometers register an even temperature in whatever position they may be placed.

5. That in summer the internal temperature of the buildings is frequently kept lower than the outer atmosphere—to the extent of ten degrees at times—without the employment of an ounce of ice. Registers kept extending over several years prove this.

6. That properly arranged ducts and flues occasionally washed down do not become fouled.

7. That by utilising low-pressure steam engines, and employing the exhaust steam for the heating and hot-water supply, there is practically no cost in running the fans for securing such efficient ventilation as is implied by the foregoing results.

8. As regards cleanliness and non-pollution of the atmosphere by smoke. No coal whatever has to be conveyed to various portions of the buildings; there are no open fireplaces; consequently no noise to disturb patients by having to make up fires either at night or during the day; no ashes have to be removed; no smoke flues to be swept; no smoke except what may be emitted from the boiler stack; and, as no heating pipes are in habitable parts of the buildings, repairs and renewal can be effected without disturbance to the occupants.

9. Absolute freedom from draughts and unequal changes of temperature.

As the subjects I have touched upon are of public interest I propose to send this letter for publication, together with any reply with which you may favour me, in the hope that discussion on matters so vital in hospital design may have a beneficial effect.—I remain, yours truly,

(Signed) William Henman.

Edwin T. Hall, Esq., F.R.I.B.A.

54, Bedford Square, W.C., 1st *May* 1903.

Dear Mr. Henman,—I am in receipt of your letter of 28th ult., and am glad to note that you have found my Paper interesting.

I wrote it by special invitation, and not with any idea of raising a controversy, and you must excuse me when I say that I have not the remotest intention of taking part in one.

You have known my views on the Plenum system of ventilation for some years, and I have known yours, which you now ably repeat.

You have probably heard of the reports extending over six or seven years as to the working of the Plenum system in one of the most recent L.C.C. asylums.

I regret that my time is so fully occupied that I am not prepared to say anything more.

Believe me, with kind regards,
Yours very truly,
(Signed) Edwin T. Hall.

19, *Temple Street, Birmingham, 2nd May* 1903.

Dear Mr. Hall,—I am sorry you cannot find time to answer any of the questions in my letter of the 28th ult., but permit me to say that does not relieve you of responsibility for making public statements you are not prepared to support by facts or explanation.

Until the publication of your recent Paper the only knowledge I had of your views on "Plenum" ventilation was such as you expressed at the Southampton Sanitary Congress in 1899 (to the report of which I have just referred), and they are certainly far from being definite or convincing.

In view of the fact that success has in several instances been attained, the unsatisfactory result at the L.C.C. asylum to which you refer is no proof that the system is at fault, but rather that inadequate or defective means have in that case been employed; and my object in calling attention to unwarrantable statements is in the hope that better attention may be paid to the subject of ventilation, particularly of hospital buildings, and to the means available for securing efficiency.

Yours truly,
(Signed) William Henman.

Edwin T. Hall, Esq.

OBSTRUCTION TO LIGHT.

Mr. Henry B. Molesworth has addressed the following letter to the Secretary:—

39, *Victoria Street, S.W.*, 4*th May* 1903.

Dear Sir,—My attention has been called to a review of my book *Obstruction to Light* in the Journal of the Royal Institute of British Architects of 25th April 1903. As the review is entitled to a certain amount of consideration from having been published in your Journal I would be much obliged if you could publish my letter, as the criticism seems based on most erroneous ideas, and seems to me extremely unfair.

The first paragraph is so involved that I am unable to gather the reviewer's meaning. He speaks of "solar" degrees. Degrees of arc, angle, or temperature, or even university degrees, are well known, but this is something new to me.

In paragraph 3 the reviewer objects to the example being worked out for 45 degrees latitude. The method is applicable to any latitude, and the procedure is the same in every case. He then infers that "perhaps, however, Mr. Molesworth considers that his theories might not be accepted by the tribunals in this country," apparently unaware that the sun's position is not a question of theory, but of fact.

The next paragraph contains a misstatement when the reviewer says that "a separate diagram would theoretically have to be made for each day throughout the year." The same diagram holds good for any day in the year, and the sun's path is simply marked on it with a line parallel to the equator at the necessary declination. The rest of the paragraph is concerned with matters which are quite outside the scope of my book, which simply describes a graphic method of ascertaining certain facts, and does not deal with theories.

The reviewer notes that the variation of the compass in England is stated as 20½ degrees W., whereas it should be 16 degrees 20 minutes W., for London. This is quite correct: the 20½ degrees was a clerical error, but the variation is not given as one of the data; it should be ascertained for the locality where the observations are taken.

In the second part of the book I have simply put Professor Robert Kerr's theory into a different and, I consider, a more convenient form.

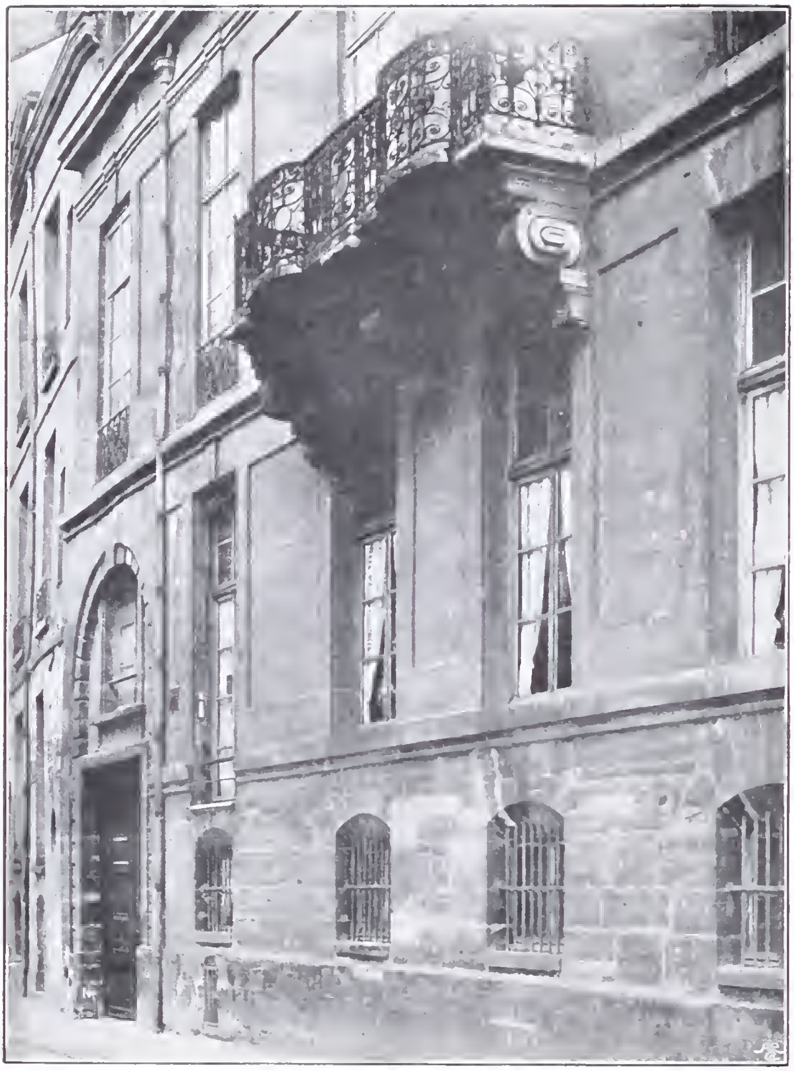
When the reviewer goes on to criticise the Appendix he gets entirely out of his depth. When he says it would be simpler just to take in the bearing of the North Star instead of multiplying calculations, he does not seem to be aware of the fact that a bearing of the North Star will not necessarily be a true north bearing, and that the star only shines at night; and when he states that the courses and distances on a great circle can be obtained by spherical trigonometry in a much shorter time than by the planisphere, it is obvious to anyone who has worked out a great circle track that he has had no practical experience in that line. On this point a captain in the Navy to whom I sent a planisphere says: "I am not sure that your great circle diagram is not simpler than Towson's, which is what we are supplied with." As regards the nautical uses of the planisphere, I found out on submitting it to a firm of chart and nautical instrument makers that it had been anticipated in almost identical form by Captain Saxby in his *Spherograph*, about 1860, and I pigeonholed the whole thing.

I do not object to criticism, but this review is not criticism. Had it not appeared under the *ægis* of your Institute, I should not have noticed it.—Yours faithfully,

Henry B. Molesworth.

THE HÔTEL DE LAUZUN, PARIS.

This sumptuous mansion, which is closely associated with the audacious Duc de Lauzun, the favourite of Louis XIV. and husband of Mademoiselle Montpensier, daughter of Gaston d'Orléans, the brother of Louis XIII., and granddaughter of Henri IV., was not built by the Duke, although he made considerable additions to the building, but by a certain Charles Gruyn, the son of a tavern keeper, who carried on the business of a wine shop at the end of the Pont Notre-Dame, on the outskirts of the Ile St. Louis, then almost uninhabited, to which the gilded youth of the Court were accustomed to resort. Gruyn's father made money and gave his son a good education, who in 1641 bought a plot of land on the Quai d'Anjou, on which he erected a magnificent hotel, which was finished in 1658. Gruyn made an advantageous marriage and changed his plebeian name of Gruyn for that of Des Bordes, the name of a property he had acquired near Loigny. Gruyn's prosperity was, however, shortlived, and in 1661, or only three years after the completion of his mansion, he was condemned for malpractices and ended his days in prison. Gruyn's widow and her family seem to have retained possession of the mansion on the Quai d'Anjou until 1681, when it was sold to the Duc de Lauzun, who was secretly married to Mademoiselle Montpensier, the cousin of Louis XIV., and it is said that the honeymoon was passed in Gruyn's mansion, which the Duke had bought and decorated on a scale of regal magnificence. Lauzun's marriage turned out unfortunately, in spite of the romantic circumstances attending it, and he soon wearied of his home and wife as well, and sold the house to the Marquis de Richelieu, who married Mdlle. de Mazarin, grand-niece of Cardinal Mazarin and daughter of Hortense Mancini. The Marquis was succeeded in the occupation of the house in 1709 by Ogier, Receiver-General of the Church, who spent enormous sums on the decoration of the rooms. The hotel next passed into the hands of the Marquis de Tessé, who sold it in the early years of the reign of Louis XVI. to the Marquis de Pimodan, who, with his son-in-law, M. de Viollaye, was proscribed by the Committee of Public Safety during the Revolution, but who both managed to escape with their lives.


THE HÔTEL DE LAUZUN, PARIS.

After the Restoration the Hôtel de Lauzun, which was at that time known as the Hôtel Pimodan, was tenanted by a succession of unknown persons until 1842, when it was purchased by Baron Jérôme Pichon, an enthusiastic collector and a man of taste, who did not take possession of it at once, but let it for a time to a coterie of romantic artists and authors, of which Théophile Gautier was the leading spirit, whose eccentric proceedings greatly scandalised the neighbours. On the death of Baron Pichon in 1896 the hotel was purchased by the General Municipal Council of Paris, with the intention of converting it into a museum of seventeenth century art.

The Hôtel Pimodan is the scene of the sketch by Théophile Gautier, the club of the Haschischians, or Opium Smokers, in his *Romans et Contes* (p. 429), in which he relates: "One evening in December, in response to a mysterious invitation . . . I found myself in a retired suburb, a sort of solitary oasis in the midst of Paris, which the river, encircling it with both arms, appeared to shelter against the march of civilisation, for it was in an old mansion in the Ile St. Louis, the Hôtel

Pimodan, built by Lauzun, that the eccentric club of which I was recently elected a member held its monthly meeting."

The General Municipal Council of Paris, who now own the property, propose ultimately to form at the mansion a museum of furniture of the seventeenth and eighteenth centuries. Meanwhile it is to be treated as a kind of adjunct to the engravings department of the Carnavalet Museum, where at present a mass of interesting engravings are buried and unknown for want of space to exhibit them.

The *Burlington Magazine* for March had an article on the Hôtel de Lauzun by Miss Rose Kingsley and M. Camille Gronkowski.

John Hebb.

REVIEWS.

SCHOOL BUILDINGS.

Modern School Buildings: Elementary and Secondary. A Treatise on the Planning, Arrangement, and Fitting of Day and Boarding Schools. By Felix Clay, B.A. With four hundred illustrations, comprising the plans of eighty-five schools, numerous views, details, &c. Lond. La. 8o. 460 *pp. Price* 25*s. net.* [*B. T. Batsford, 94, High Holborn.*]

It is not often that it is possible to record a universal chorus of approval at the opportune arrival of such a standard work of practical importance as Mr. Clay's *Modern School Buildings,* which will be welcomed not only by the architect, but by teachers and those interested in the national character of our educational systems.

We have had nothing authoritative since Mr. Robson's valuable work, *School Architecture,* a quarter of a century ago, and Mr. Robins's on Technical Schools in 1884. Within that period planning on a definite basis, for a specific object, has become an essential in architectural practice; indeed the same may be said for every conceivable class of structure to meet modern requirements. Years ago, and perhaps in an appreciably less degree now, we have had professional specialists. To-day the qualified architect, besides his inherent artistic qualities, must be fully conversant with the technical uses which necessarily are a part of the buildings he is called upon to design: these principles he has to compose and weave into the composition he is producing.

Mr. Clay's admirable book supplies this material of principles and examples in an abundant and ample manner, so that it is unnecessary to prolong a notice beyond calling attention to the invaluable and orderly array of comparative facts, materials, and illustrations which have been ably collected and systematically arranged for the reader's convenience and study, and which should assuredly cause the book to find a place among every architect's works of reference.

Over half the volume is devoted to Part I., Secondary Education. Mr. Clay is thoroughly at home in breaking what is practically new ground. The history of the secondary system —the planning of higher-grade schools, training colleges, boarding schools, and considerations attendant on alterations—opens up a very wide field of inquiry which, though far from exhausting, the author expounds, with much useful information and added suggestion, while throughout the volume adequate comparisons with and appreciation of the schools of Germany and America are freely made. Part II. is devoted to the better known subject of Elementary Education, the information being condensed into eighty-seven pages. After an historical reference, attention is called to the late Professor Roger Smith's "Ben Jonson" school, which, curiously, was before its time, but to-day is the acknowledged germ whence the present principle of planning the best schools, both secondary and elementary, has arisen. Part III. deals with Hygiene, and some useful appendices are added.

Mr. Clay's work is most opportune at the present time, and even apart from its valuable technical matter as a work of reference would call for more than usual attention, by reason of the wealth of illustration; for instance, one is able usefully to note the evolution of the school in a way otherwise impossible, and to effect a comparative survey from the very admirable plans and illustrations, while abundant reference is made to authorities and official records, and it possesses a commendable feature which we do not remember seeing before, in full references to professional journals.

William A. Pite.

ALLIED SOCIETIES.

The Manchester Society.

At the Annual General Meeting of the Manchester Society of Architects held 30th April 1903 the following Officers and Members of Council were elected:—*President*: J. W. Beaumont [*F.*]; *Vice-Presidents*: John Ely [*F.*], W. A. Royle [*F.*]; *Hon. Secretary & Treasurer*: Paul Ogden [*F.*]; *Assistant Hon. Secretary*: George Brown; *Members of Council*: Alfred Darbyshire [*F.*], F.S.A., Edward Hewitt [*F.*], J. D. Mould [*F.*], Isaac Taylor, J. B. Gass [*F.*], Jesse Horsfall [*F.*], A. J. Murgatroyd, John H. Woodhouse [*F.*], P. S. Worthington, M.A. [*A.*], A. E. Corbett [*A.*], L. H. Dutch [*A.*], and A. H. Mills [*A.*].

The Northern Association.

The following are the Officers and Council for the Session 1903–4:—*President*: J. W. Taylor

[*F.*]; *Vice-President*: J. T. Cackett [*F.*]; *Hon. Treasurer*: R. Burns Dick; *Hon. Secretary*: A. B. Plummer [*F.*]; *Hon. Solicitor*: H. C. Harvey; *Hon. Librarian*: H. C. Charlewood [*F.*]; *Council*: H. G. Badenoch, H. Barnes [*A.*] (Hon. Local Secretary for Hartlepool), G. T. Brown (Hon. Local Secretary for Sunderland), J. Bruce, F. E. Caws [*F.*], F. Clark [*F.*] (Hon. Local Secretary for Darlington), J. W. Donald [*A.*], J. W. Dyson, M. H. Graham, H. Grieves [*A.*], J. H. Morton [*F.*] (Hon. Local Secretary for South Shields), T. Reay, C. S. Errington [*A.*], J. C. Maxwell [*A.*], R. H. Morton [*A.*], C. E. Oliver, R. P. S. Twizell [*A.*]; *Auditors*: C. Walker, W. W. Oliver.

The Liverpool Society.

The following are the Officers and Council for next Session:—*President*: John Woolfall [*F.*]; *Vice-Presidents*: T. E. Eccles [*F.*], P. C. Thicknesse; *Hon. Secretaries*: Hastwell Grayson, M.A. [*A.*], Gilbert Fraser [*A.*]; *Hon. Treasurer*: James Dod; *Hon. Librarian*: Alan G. James; *Council*: James Dod, Henry Hartley [*F.*], E. P. Hinde [*A.*], E. A. Ould [*F.*], S. Pugin Powell, Prof. Simpson [*F.*], W. E. Willink, M.A. [*F.*], Alan G. James, Arnold Thornely [*A.*].

The Birmingham Association.

The Officers and Council for the ensuing Session are as follows:—*President*: Arthur Harrison [*F.*]; *Vice-President*: Thomas Cooper [*A.*]; *Members of Council*: W. H. Bidlake, M.A. [*A.*], C. E. Bateman [*F.*], H. T. Buckland [*F.*], A. E. McKewan [*A.*], Alfred Hale [*A.*], W. A. Harvey, E. L. Percival; *Treasurer*: Edward Hale; *Secretaries*, G. H. Vernon Cale, Gerald McMichael [*A.*].

LEGAL.

Agreement to pay Outgoings in respect of Premises: Repair of Drains: Tenant's Liability.

STOCKDALE *v.* ASCHERBERG.

In this case, heard before Mr. Justice Wright in the King's Bench Division on 23rd April, the plaintiff agreed to let and the defendant to take a house, 68, Brondesbury Villas, Kilburn, for three years, and then from year to year, at the yearly rent of 55*l.*, payable quarterly, free of all deductions except landlord's property tax.

The defendant agreed to pay all taxes, rates, assessments, and outgoings of every description for the time being payable in respect of the premises as they became due (landlord's property tax only excepted as aforesaid).

The defendant further agreed to keep and leave the premises in as good condition as they were at the date of the agreement, reasonable wear and tear excepted, and to keep the gutters, stacks, pipes, water-closets, and cisterns clean, and to keep in repair all sash-lines and internal pipes and taps.

While the defendant was in occupation under this agreement, the Willesden Urban District Council served a notice under the Public Health Act upon the plaintiff to repair the drains of the house. The plaintiff did the necessary repairs at a cost of 83*l.*, which was now claimed from the defendant.

Mr. G. F. Hohler, for plaintiff, cited *Aldridge* v. *Ferne* (1886), *Brett* v. *Rogers* (1897), *Farlow* v. *Stevenson* (1899), and *Foulger* v. *Arding* (1902).

Mr. E. Foà, for defendant, cited *Wilkinson* v. *Collyer* (1884), *Batchelor* v. *Bigger* (1889), *Foulger* v. *Arding* (1902), *In re Bettingham* (1892), and others.

Mr. Justice Wright gave judgment for the plaintiff, holding that, as between the plaintiff and the defendant, the defendant had agreed to pay the expenses of repairing the drains.

MINUTES. XIII.

At the Sixty-ninth Annual General Meeting (being the Thirteenth General Meeting of the Session 1902–3) held Monday, 4th May 1903, at 8 p.m., Mr. John Slater, *Vice-President*, in the Chair, with 14 Fellows (including 4 members of the Council), 15 Associates (including 2 members of the Council), 1 Hon. Associate, and 1 Retired Fellow, the Minutes of the Meeting held 20th April [*ante*, p. 336] were taken as read and signed as correct.

The following Fellows, attending for the first time since their election, were formally admitted by the Chairman and signed the Register:—William Henry Knowles, F.S.A. (Newcastle-upon-Tyne), Arthur William Yeomans (Chard, Somerset).

The Chairman having announced the decease of Achille Hermant [*Hon. Corr. M.*], and given some particulars of his career, moved, and it was thereupon

> Resolved, that the Institute do record its regret at the loss the Institute and the Société Centrale des Architectes Français have sustained by the death of Achille Hermant, and that a letter of condolence be sent from the Institute to his son M. Jacques Hermant.

The Report of the Council for the official year 1902–1903, a copy of which had previously been sent to every member resident in the United Kingdom, having been formally presented and taken as read, its adoption was moved by the Chairman and seconded by Mr. E. A. Gruning [*F.*]. The Report was then discussed and the Meeting

> Resolved, *nem. con.*, that the Report of the Council for the official year 1902–1903 be approved and adopted.

A vote of thanks was passed by acclamation to Messrs. Louis Ambler [*F.*] and William A. Forsyth [*A.*] for their services as Auditors; and the same gentlemen were nominated Auditors for the ensuing year of office.

Upon the motion of the Chairman, seconded by Mr. J. Douglass Mathews [*F.*], a vote of thanks was passed to the Secretary and the other officials for their services to the Institute, and was briefly acknowledged by the Secretary.

The Meeting authorised the Council to appoint Scrutineers to direct the election of the Council and Standing Committees for the ensuing year of office and to report the result thereof to the Business General Meeting of the 8th June.

The Statutory Board of Examiners was reappointed as follows:—Messrs. Arthur Ashbridge, Thomas Blashill, Arthur Crow, Percivall Currey, F. W. H. Hunt, J. Douglass Mathews, R. P. Notley, Lacy W. Ridge, H. D. Searles Wood, Benjamin Tabberer, Thomas Henry Watson.

The proceedings then closed, and the Meeting separated at 9.30.

THE BEGINNINGS OF THE EGYPTIAN STYLE OF ARCHITECTURE.

By Professor Sir Martin Conway.

Read before the Royal Institute of British Architects, Monday, 18th May 1903.

PROFESSOR FLINDERS PETRIE, in an epoch-making Paper read before the Royal Institute of British Architects, 20th May 1901, and in other Papers, has described the building methods of the prehistoric and early dynastic Egyptians, incidentally pointing out certain forms and features which took definite place and endured in what we recognise as the Egyptian style. It is unnecessary here to define the Egyptian style, because it is the most easily recognised in the world. Even the proverbial schoolboy knows it when he sees it. That style appears to have arisen about the time of the Fourth Dynasty, and to have rapidly developed during the Fifth. The elements of which it was composed, or from which it was derived, existed earlier, but not till the Fourth Dynasty were they definitely compounded into an architectural style applicable, and thenceforth continually applied, to buildings in stone. It is to the origin and growth of that style of stone architecture that I wish now to direct your attention.

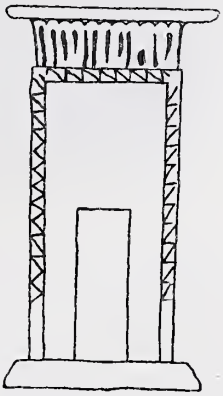


FIG. 1.—HIEROGLYPH REPRESENTING A SHRINE.

The testimony of the hieroglyphs, and of actual remains, proves that the prehistoric and early dynastic Egyptians used Nile mud as their chief building material. They either made it into bricks, or they used it with a stiffening of reeds for supports, or plastered it on to a lattice-work of reeds or palm-fronds for walls. Until recently it was commonly believed that the early dynastic Egyptians likewise employed wood for small or costly edifices. Perrot and Chipiez devote a learned chapter to the reconstruction of examples of this supposed wooden architecture, basing their conclusions upon certain sarcophagi made in the likeness of palaces, and upon representations of architectural features in tombs. In fact, however, as Mons. Foucart was, I believe, the first to point out, no such Egyptian wooden architecture ever existed. *Primâ facie*, in an almost woodless country like Egypt, wooden architecture was not to be looked for; though it should be remembered that 5,000 years before Christ more timber may have grown along the banks of the Nile than grows there to-day, thanks to the activity of man. The pictures and models in question, however, did look like representations of wooden structures.* Take, for instance, a series of details from wall-paintings in tombs of the Fifth and Sixth Dynasties, reproduced from

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* Professor Petrie has called attention to a delicate ivory model in the Louvre representing the façade of a building. An illustration of it, as completed by him, will be found in the Paper above referred to. The line of very thick columns below seems to me to stand for a line of plastered reed columns. The band that ties them together can be clearly seen below the capitals. The light upper part of the façade may have consisted, to a considerable

Lepsius and Prisse d'Avennes, and conveniently grouped together by Perrot and Chipiez (vol. ii. pp. 86–89). The slender columns there depicted look even more like metal than wood. It must, however, be remembered that unpractised architectural draughtsmen, even though they be for their day able artists, invariably represent columns with exaggerated slenderness. I quote in illustration Giotto's painting of the façade of the Temple of Minerva at Assisi, which occurs in one of his frescoes in the upper church. The actual façade still exists, and the columns of the portico are of perfectly normal type; yet in Giotto's picture they are made impossibly slender. Parallel examples from the wall-paintings of Roman Italy might be quoted by scores.* As a further example of the same tendency early pictures of mountains may be cited. Before the days of photography every peak was depicted as a needle.

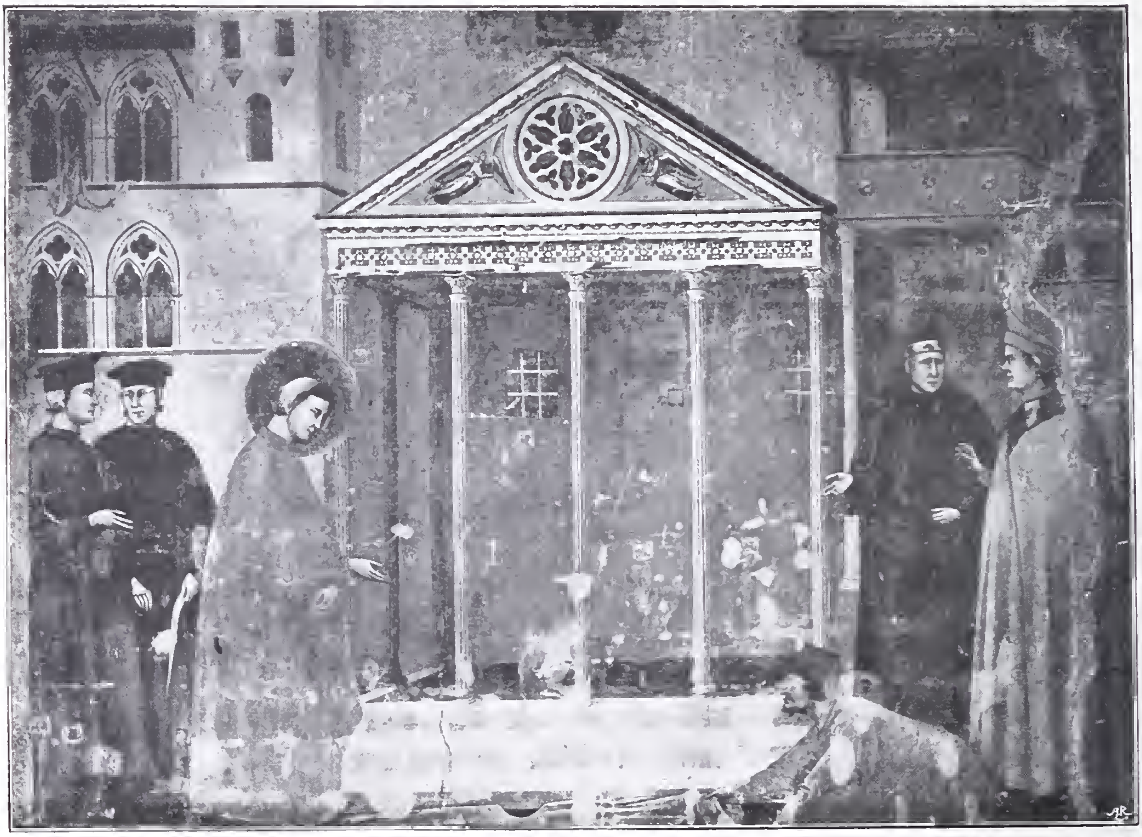

FIG. 2.—TEMPLE OF MINERVA AT ASSISI AS DEPICTED BY GIOTTO.

That supports of normal proportions should thus be represented by early Egyptian draughtsmen abnormally slender is not surprising, but was to be expected. The columns in their pictures must be greatly amplified in breadth if they are to be translated into structural reality. Those that represent tent-poles and the octagonal or sixteen-sided columns of the hieroglyphs were originally of wood. The rest were of reed-bundles plastered over with mud, such as the fellahin of to-day so freely employ as supports. Both kinds

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extent, of wood, but the concentration of architectural features into a small area and the omission of parts not easily represented on a small scale may have altered the aspect and obscured the meaning of the whole. But for the discovery of the Naqada tomb we should not have been able to interpret the sarcophagus of Menkaura.

* Vide Woltmann's *History of Painting*, fig. 32.

had been copied into stone at the date of the pictures we are referring to, and those pictures may actually depict stone buildings, little though they suggest that material.

The sarcophagi that are carved in stone like miniature houses are easily interpretable in the light of modern discoveries. Since the tomb at Naqada was laid bare, and its connexion with Mena or perhaps his wife demonstrated, a new light has been thrown on the palace architecture of the earliest dynasties. Externally that tomb was a model of a contemporary palace. The sarcophagi were smaller models of the same type of building. The characteristic feature in all is the series of niches into which the whole exterior surface is broken up. We fortunately possess materials for the detailed reconstruction of, at all events, part of a palace façade of the Fifth Dynasty, which, so far as the general type is concerned, does not differ from the façade of the Naqada tomb. It must be remembered that the purpose of an ancient Egyptian tomb and of its furniture and decoration was to supply the ghost of the dead proprietor with possessions and a position similar to those he had enjoyed in life. If he had lived in a palace his tomb had to be a palace in miniature. If he had in life enjoyed access to the royal palace, such access had to be provided for him by his tomb. Every normal fully equipped tomb of the old Empire contained what is known as a false door through which the ghost was supposed to be able to pass and repass from the ghostly world; but some tombs have two such pictured or sculptured doors, one much more elaborate than the other. Tombs containing the second elaborate door are found to belong to members of the royal family or the very highest officials who had access to the king. The elaborate doors, in fact, depict the entrance to the palace. In the tomb of Ptah-hotep at Sakkara we find a well-preserved example of this class. Beyond all question it represents a portion of the palace façade. Over the doors of some of these representations the name "Mena" is inscribed, and it has been suggested that the palace in every case is supposed to be the palace of Mena himself. At all events, it was clearly a building of the same kind as that which the Naqada tomb represents, and which is reproduced on a smaller scale by such a sarcophagus as Khufu-ankh's. If we had only the Ptah-hotep painting to guide us we might well imagine, with Perrot and Chipiez, that the original building was of wood; but with the Naqada tomb before us we can see that it must have been of crude brick, with the surface elaborately and perhaps tastefully painted. Wood was used in these buildings to frame openings and support ceilings, but it was not an important architectural feature.

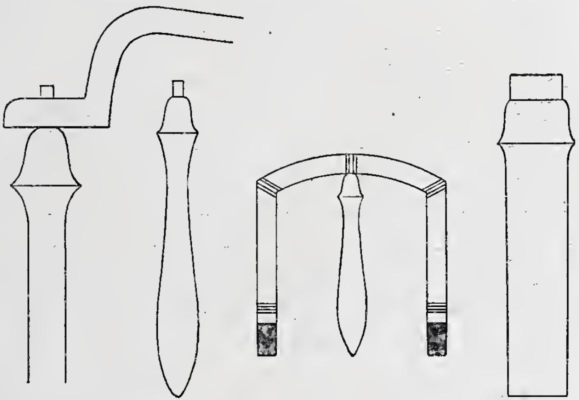
FIG. 3.—TENT-POLES AND COLUMN IMITATED FROM THEM.

Thus we have evidence that the palaces and doubtless most other buildings of the early dynastic period were built of crude brick, and that the architecture of that time was an architecture of mud and reeds, not of stone, still less of wood. The characteristic feature of exteriors was the rectangular niche—niches within niches. The supports were bundles of reeds, or clustered bundles, plastered over with mud and modelled above, for capital, into the likeness of buds or flowers. It would be easy to construct imaginary restorations of such buildings, but they would not carry us further than our bare statement carries us.

Thus far then we have obtained no information whatever as to the origin of Egyptian stone-architecture. Of the beginnings of stone building Professor Petrie has already told us the important facts. He has actually revealed a granite pavement in a chamber of the tomb of the First Dynasty king, Den, but so far was that from being an architectural feature that it was actually covered over by a layer of mud-bricks. He has further brought to light the first known chamber built of stone, which is that of King Khasekhemui, of the Second Dynasty, and those who will refer to his Paper already quoted will find his conclusive reasons for deciding that stone building was practised at that time, whilst, as he reminds us, Manetho records that the second king of the Third Dynasty "built a house of hewn stone." All this, however, is mere building, not architecture. The same statement is true of the Step-Pyramid of Sakkara, which dates from the Third Dynasty. That is built of stone, but if it ever possessed any architectural features no trace of them has survived. It contained indeed a chamber covered with glazed tiles, a decoration no doubt adopted from contemporary crude-brick buildings, which, like similar buildings in Chaldæa, would naturally be so decorated by people who knew the art of glazing; but such flat wall decoration, without division of areas or any special adaptation to the chamber, is no more an architectural feature than so much wall-paper would be. Tile decoration can, of course, be made an architectural feature—as it was in Persia—but the tile decoration of the third pyramid chamber is not in any sense architectural. The lesson of the Medum pyramid and its adjacent chapel is the same. The masonry is better; the pyramid approaches without actually reaching the developed type, but it is in no sense a work of architecture. It is a mere mountain of stones built together. The chapel which Petrie carefully excavated and wisely reburied is a most important monument for us. It is the simplest kind of stone-building conceivable, with plain walls, rounded off at the top when they do not carry a roof. There are no piers. The doorways are absolutely plain, and the whole edifice is devoid of ornamentation. The only architectural quality it could have possessed is good proportion, and that is wanting. The neighbouring mastabas are similarly destitute of architectural quality. Their false doors are inscribed with beautiful hieroglyphs, but there is no attempt to arrange them architecturally. At this date, then, the art of stone architecture had not arisen.

If we investigate the interiors of the mastabas of the Fourth Dynasty we receive a like impression. Some of them contain chambers whose roofs are supported by plain square-sectioned stone piers. These are treated as so much wall-space and inscribed like the walls, but there is no architecturally decorative intent about the division of wall-spaces or the arrangement of painted reliefs, however meritorious in themselves the latter may be. Nor are the proportions of these chambers good before the Fifth Dynasty. Practical considerations alone determined their measurements. The pyramid chapels of the day seem to have resembled Seneferu's in style or lack of style. The so-called Temple of the Sphinx is still plain and charmless. Its merit is in the technical excellence of the masonry—the wonderful way in which the hard stone employed has been shaped and the admirable fitting of its huge blocks—but that is not architecture. Possibly it may be contended that the pyramids are works of architectural art. If we consent to admit them into that category we must at the same time observe that the architectural element in them is a very minute factor, confined solely to the angle of their slope. An admirably proportioned figure was in fact arrived at, but that it was arrived at with an æsthetic end in view is very improbable. Many indications exist to lead us to the conclusion that astronomical measurements decided alike the position and the form of the great pyramids. If so, they count as works not of art but of science.

Thus far, then, down to the middle of the Fourth Dynasty, I claim that we have as yet no proof of the existence in Egypt of an art of stone architecture. The craft of building in stone had been carried to a high degree of perfection, but as yet it had developed no architectural art. Beautiful building, building whose forms and features were determined by the desire to give pleasure to the eye, was only carried out in the old materials of mud and reeds with which the Egyptians had been familiar from the earliest prehistoric days.

What are the characteristic features of a stone building in the developed Egyptian style? The walls have an external batter, they are surrounded or edged by the torus moulding, they are crowned by the Egyptian gorge. The supports are either piers—square, octagonal, or sixteen or more sided—or clustered columns made in imitation of bundles of papyrus-stems or reeds, with a flat circular stone for base and with a capital made in imitation of a group of flowers, buds, or palm-fronds. There are porticos and halls of columns and there are dark chambers and passages. Now only the piers, the porticos, and the halls of columns can have descended in direct sequence from the early stone buildings we have thus far mentioned, and it is not to be supposed that such elements were lacking in contemporary or even prehistoric mud buildings. We may therefore safely declare that all the features and principles of Egyptian architecture were invented by the mud builders and were afterwards directly translated into stone. The outward batter of the walls of stone buildings had no meaning in stone; it was borrowed from mud-brick, borrowed because the Egyptian eye had become so habituated to the form that it was almost necessary to its satisfaction. The Egyptian gorge copies the old fringe of palm-frond tips with which mud walls once habitually terminated. The torus moulding was a translation of the bundle of reeds that protected the tender angle of termination of a mud wall. All these and every other element of Egyptian stone-architecture sprang directly out of structural members of the earlier mud style.

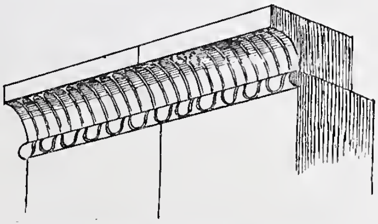

FIG. 4.—THE EGYPTIAN GORGE AND TORUS MOULDING.

The important question we have now to answer is this: When did this translation take place, and in what kind of building? The well-known sarcophagus of Khufu-ankh at Cairo throws a welcome light upon this problem. It represents a palace, apparently built of crude brick with wooden fittings. The vertical grooving along the top of the lower part was doubtless intended to represent the gorge. If at that time the gorge had actually begun to be imitated in stone as a cornice to stone buildings, the mason who carved this sarcophagus would have known better than to represent it by flat grooving. The fact that he flattened it seems to prove that, though at the time the gorge was in common use as top member of a crude brick building, it had not yet taken its place in stone building. In other words, the Egyptian stone architectural style had not begun to arise in the days of Khufu and Khafra. This conclusion is confirmed by the representation of the façade of a temple depicted in a Fourth Dynasty tomb at Abusir.[*] Here the walls are vertical and absolutely plain, whilst the flat roof is supported by piers terminating in a plain square abacus. Such was a stone edifice of that date.

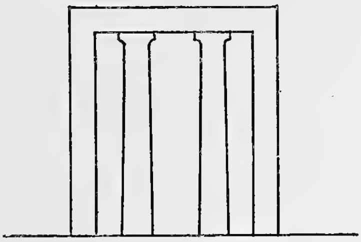

FIG. 5.—THE FAÇADE OF AN EARLY TEMPLE.

A further indication that decorated stone-architecture had not arisen may be drawn from the only Fourth Dynasty representations of stone columns that have yet been identified. They were noticed by Professor Petrie in his *Season in Egypt*, 1887 (pl. xxv.), in the tomb of Khufu's son, Khufu-Kha-f, at Gizeh. He says (p. 32), "on either side of a doorway in the inner chamber leading to the serdab is a column in low relief, represented as supporting the lintel. It has," he adds, "a well-formed base, a slight taper of the column in rising from it, an astragal at the top, and a spreading capital." Professor Petrie surmises that the form of these columns and capitals is directly copied, not from any existing column in wood or other material, but from a vase upon a stand which is found depicted in the same tomb between two ewers. These columns appear to be unique. We find no others like them, and none derived from the same type. They were a "sport," indicating that a development of stone-architecture was at hand, but not directly contributing to it.

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[*] Foucart, *Hist. de l'Ordre lotiforme*, p. 16, fig. 8.

The sarcophagus of Menkaura as compared with that of Khufu-ankh shows a development. Like the latter, it imitates a building, usually said to be of wood, but really of mud and reeds, or mud-brick perhaps, with wood fittings. This building is surmounted by a fully developed gorge cornice, whilst each façade is surrounded by a torus moulding. Here, then, is the Egyptian style completely formed. It must have sprung into existence between the days of Khufu and Menkaura.

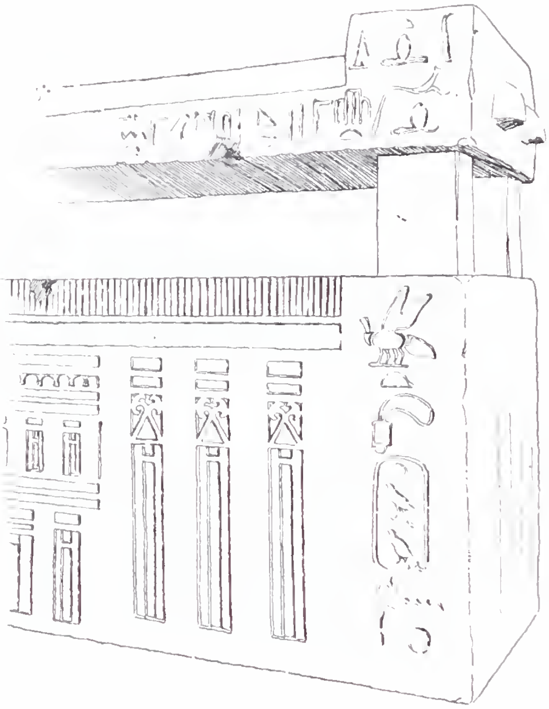

FIG. 6.—SARCOPHAGUS OF KHUFU-ANKH.

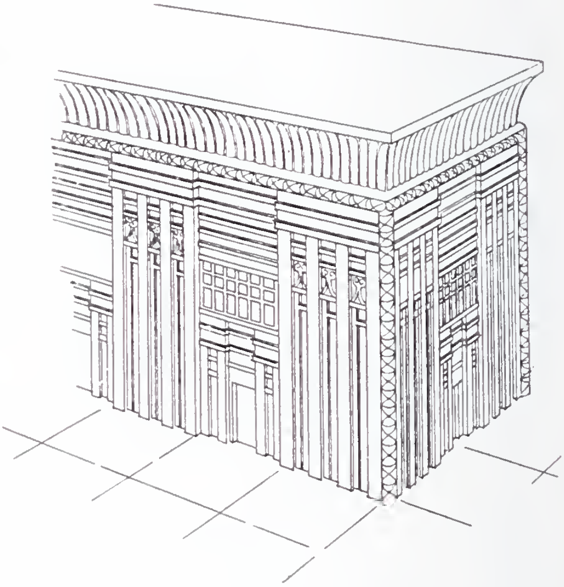

FIG. 7.—SARCOPHAGUS OF MENKAURA.

When we come to the Fifth Dynasty, there are plenty of indications that we have reached an age of stone-architecture. The steles alone would suffice, I think, to prove it. Take almost any one of this period,[*] and you find it crowned with a gorge and bordered by the torus moulding. In the midst is a door, probably with decorated jambs and lintel, and with the roller on which the curtain was supposed to be rolled. Above the roller in a square frame is represented the interior of the tomb, with the Ka of the deceased receiving his necessary supplies of food and drink. Obviously, the whole is the representation of an actual edifice. Here we have two façades, one apparently of a stone building, the other a decorated façade of the Mena Palace type.

We are not, however, restricted to inference from such examples of figured architecture.

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[*] E.g. *Perrot and Chipiez*, vol. i., fig. 120, from Lepsius.

The Fifth Dynasty has left us several actual examples of stone-architecture containing decorative features, such as a mastaba at Sakkara, figured by Mariette (*Perrot and Chipiez*, i., fig. 110), where we find the architrave of a portico decorated with a stone gorge, rather tentatively employed.

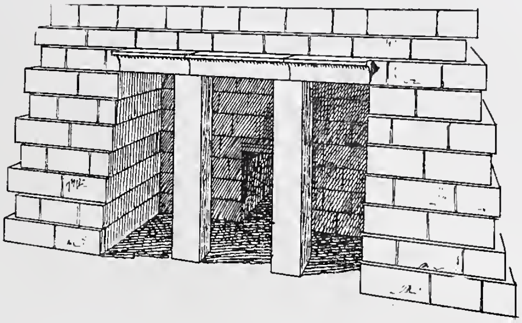

FIG. 8.—PORTAL OF A MASTABA OF SAKKARA.

In the year 1893 the tomb of Ptah-Shepses at Abusir, which dates from the beginning of the Fifth Dynasty, was excavated by the French officials of the Cairo Museum, and yielded results of the highest importance for our present enquiry. Fragments of lotiform capitals and columns were then brought to light, upon which our most careful attention must now be turned. The discoverers, it is true, did not realise the importance of their find, and did not even trouble to collect all of these invaluable fragments. Moreover, they published (*Revue Archéologique*, 1894, t. i., p. 18) a very insufficient account of the columns, accompanied by an illustration which can only be described as "criminally inaccurate." Fortunately, an accurate French savant, Mons. George Foucart, was able, after infinite trouble, to supply some of their deficiencies, and it is to him, and not to the official French heads of the Egyptian Department of Archæology, that our thanks are due for this important addition to our knowledge of the origin of the Egyptian style of architecture.*

The tomb in question was approached by a great court, which was surrounded by a colonnade of twenty square piers, whether surmounted by a gorge or not is not stated. At the end of the great court was a porch of two columns, whereof only fragments remained, and *they were not collected!* In a lateral chamber, which contained the statues of the deceased, there remained fragments of the two columns that had supported the roof. The base and lower portion of the shaft of one were in place, and enough fragments of a capital were found to enable a complete restoration to be made. These fragments were taken to Cairo. Column and capital in each case were hewn out of a single block of limestone.

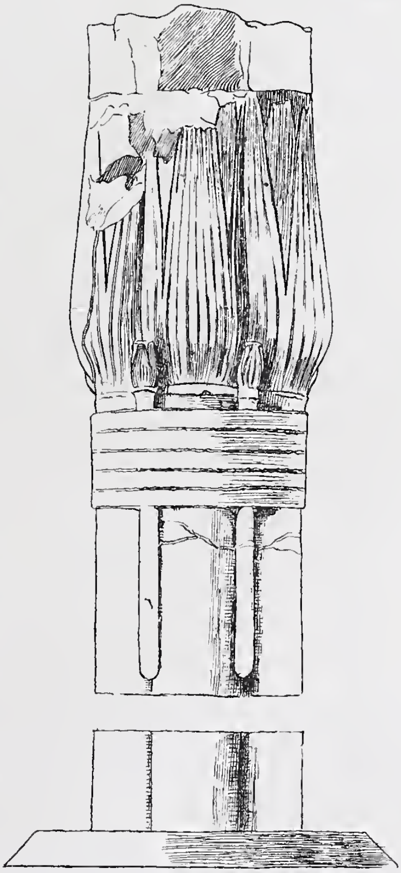

FIG. 9.—COLUMN FROM THE TOMB OF PTAH-SHEPSES AT ABUSIR.

The circular base is simply bevelled off at a slope of about 45°. Its diameter is large in proportion to that of the shaft. Such large bases were required when they were used instead of a foundation to spread the pressure of a shaft over an area of ground large enough to support it. These wide shallow bases remained traditional in stone-architecture down to the Middle Empire. We find them again in the tombs of Beni-Hasan, where they have no structural reason for existence. Unfortunately no accurate section of the shaft has been published. It imitated a cluster of six bundles of reeds. Professor Petrie records that the six colonnettes are not equal in section, nor are they, as stated, elliptical. "Two wide and flattened colonnettes, back to back, are each flanked by two smaller and round colonnettes." The clustered shaft tapers slightly. Each colonnette ends in a lotus-bud, and the group of six buds forms the capital. A fivefold moulded band below the buds seems to tie the colonnettes together. The hollows between the colonnettes at the ties are filled each one with a small lotus-bud, whose stem is prolonged a short distance below the ties. All the details of the sculpture are admirably done and show a feeling for a pleasant quality of surface-form such as we find in the best, but only the best, mural bas-reliefs of this period. The calix and corolla of the flower are carefully studied from nature and admirably formalised for their function of decorative architectural members. The different layers of petals of the opening flower are indicated, and so is the characteristic veining of the petals. These details are rendered by the co-operation of sculpture and painting in harmony together, as we find them also in the tomb bas-reliefs, which are equally dependent upon relief and colour for their effect.

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* *Histoire de l'Ordre lotiforme*, Paris (Ernest Leroux), 1897, pp. 93 *et seq.* and figs. 41 and 42. This book is of great importance, and should be studied by all students of Egyptian architecture. See review of it by Prof. Petrie, JOURNAL R.I.B.A., Vol. IV., 3rd series, pp. 361–364.

This column and capital from Abusir are beyond question the finest that have come down to us from ancient Egypt, as far as workmanship and carving are concerned. Of their proportions we can as yet say nothing, for the height, though deducible from the tapering, has not yet been computed by anyone. The proportions of the capital as a whole, and of its parts, are excellent. The abacus is a thin, rectangular tablet. In the Middle Empire it was made thicker. It is only by comparing these Abusir fragments with later examples of the lotiform order, such as the Middle Empire rose granite column in the British Museum, which was at a later date inscribed with the cartouches of Amen-hotep III. and other New Empire Pharaohs—it is only by comparing the Abusir column with these that its surpassing merit becomes obvious. We may, I think, justly conclude that the Memphite architecture of the Fifth Dynasty was highly meritorious, and may have been the finest ever produced in ancient Egypt, or even in the world before the great days of Greece. Foucart may, perhaps, be justified in calling the Memphite period the Periclean age of Egypt.

There is no reason for assuming that before the making of the Abusir column there was any long period of slow development of the style. Like all other styles it probably arose swiftly when the time was ripe. A long preceding period of mud-and-reed architecture there may have been, in which types were formed by the character of the materials used. A long preceding period of stone building we know there was, stretching away back to the pit-chamber of the King Khasekhemui, about 4350 B.C., in the middle of the Second Dynasty. The date of the Abusir column is about 3600 B.C. During the intervening seven and a half centuries, the masons of Egypt learned their craft and were fitted to become artists. As power came to them they first lavished it upon the ponderous magnificence of the pyramids, striving, it would seem, to make their masonry ever technically more sound, more exactly finished, more surprising by the smoothness and mathematical accuracy of the monstrous completed edifices.

When the columns in Ptah-Shepses' tomb were discovered they were unique for their date; now they are no longer so. Excavation proceeds so rapidly that the novelties of one year become mere types a few years later. The pyramid field of Abusir is being systematically explored by the German Oriental Society, and they have already added much to our knowledge. They have already laid almost entirely bare the pyramid temple of the Fifth Dynasty king, Ra-en-user, which is earlier in date than Ptah-Shepses' tomb. Its inner part, which lies close to the E. foot of the pyramid at its S. end, seems not unlike the temple of

Seneferu's pyramid, but is not yet wholly uncovered. In front of that was an oblong courtyard, surrounded by a colonnade of clustered monolith granite columns, similar to the one we have discussed, but unfinished. Each is inscribed with the title of the king, who is said to be "beloved by the gods of Lower (or Upper) Egypt." The architraves were also of granite. This court is approached by an open passage or narrow court, flanked on either side by carefully guarded chambers for offerings. It must be remembered that pyramid temples, which corresponded with the chamber of offerings in a mastaba, are altogether different from temples for Divine worship, and neither throws light upon the other's plan; but as far as architectural style is concerned they may be considered together. In Ra-en-user's temple we find the gorge cornice and the colonnade of clustered columns fully developed. The courts were floored with basalt. In the great court was a red-sandstone cistern to catch the rain-water. A drain led this out to another red-sandstone cistern. The base of the walls was also of basalt (in places of granite), which explains the black-painted dado so frequently found in tomb-chambers of the Old Empire. The walls, above the basalt foot, were all covered with fine plaques of white limestone, delicately carved and painted, whereof only fragments remain. The side posts of the magazine doors were of red sandstone; whether granite was used for the chief portals is not stated. The only fragment of sculpture found was a noble head of a colossal granite lion. There were also remains of an alabaster altar embellished with reliefs of the various nomes.

Another pyramid temple, that of Nefer-er-ka-ra, exists in the neighbourhood, but has not yet been dug out. All that is visible of it is built of crude bricks, but the base of a fourfold clustered column has been found. Remains also exist at Sakkara of the funerary temple of Unas, last king of the Fifth Dynasty, from which a monolith rose granite column with a fully developed palm capital has been brought to Berlin. It is very roughly sculptured and may never have been finished. Two other granite columns of Unas are in the Cairo Museum.

Throughout the period when true stone-architecture was arising in Egypt—the last part of the Fourth and the whole of the Fifth Dynasties—it is evident that pyramid building steadily lost its charm for the kings.

Khafra's pyramid was smaller than Khufu's, Menkaura's than Khafra's; their successors were yet smaller. Why was this? Evidently because as time advanced less of the mass of human energy under the command of the king was devoted to pyramid-building, and more to building of some other sort. It was just then that such indications as we possess lead us to conclude the new style of architecture to have been arising. A new style of architecture only arises in a great building epoch, and great building epochs do not come unless the circumstances of the day demand them. The present is a great building epoch in America. Why? Because a newly-made nation of over eighty millions of people, which has developed new habits of life and business and a new method of government suited to its circumstances of time, place, and race, imperatively requires its families, its firms, its companies, and its institutions to be housed, and commands all the necessary means for doing the work. That is why it is certain that the style of architecture of the future is now being developed on the soil of the United States.

If the Fourth, Fifth, and Sixth Egyptian Dynasties were contemporaneous with a great building epoch, the reason was not dissimilar. The First Dynasties had to organise and develop the land they had conquered. They had to drain and irrigate it, to master the problem of the Nile, to organise the tribes of Egypt, and weld them into a nation. By the end of the Third Dynasty this work was accomplished. Wealth resulted. The governing class grew rich; the king very rich. He disposed of countless strong arms and skilful hands, for his people had been acquiring skill from prehistoric times and were naturally gifted with more than ordinary capacity for dexterous workmanship. During this formative period a new civilisation sprang up, a new religion grew, a new ideal took root in the minds of the Egyptians, a new social structure and a new governmental system were developed. Thus about the time of the Fourth Dynasty there arose a demand for the "housing" of these new ideas. The first creature that clamoured for material accommodation was the ghost of the king, requiring a home to last him ten thousand years; then came the ghosts of his nobles; next it was the turn of the gods. Palaces and houses were no doubt called for of increasing magnificence, and forts to guard the country from attack. It was in the effort to respond to these demands that the Egyptian style of architecture arose and took definite form.

Unfortunately it is mainly by inference that we arrive at this result. Fourteen years ago I came to the conclusion, which I then put on record, that the Sixth Dynasty was contemporary with a period of good architecture. "Sixth Dynasty doorways," I wrote,* "are better proportioned and often very effectively decorated. The interiors, too, of tomb-chambers of this period are spacious, and produce a pleasant effect upon a person entering them. If we had a few more remains, or if those we do possess had been more wisely studied, we could generalise more confidently. As things are, it is only possible to express the opinion that, about the time of the Sixth Dynasty, Egyptian stone-building began to enter the domain of architecture." At that time I was almost alone in such an opinion. Now it appears I might have been hardier still, for it was not the kings of the Sixth but the last kings of the Fourth Dynasty that presided over this important development.

Let us now turn to consider the character of the Divine temples of the Old Empire. Fragmentary remains prove that Khufu used granite in temples built by him, whilst the so-called Temple of the Sphinx exists to demonstrate the freedom with which the hardest rocks were employed in large masses by his successor Khafra. We shall probably be safe in conjecturing that their successors of the next two Dynasties added to these buildings and themselves built a great many more. Probably these first stone temples took the place of earlier shrines of crude brick, as they in their turn had replaced the slight wattle or mud-and-reed shrines of the prehistoric folk whose forms the hieroglyphs preserve. Egypt in the days of her greatness was sown from the Second Cataract to the edge of the Mediterranean with a series of vast temples, such as no other country in the world has ever equalled for size and number in any equal area. Almost all those temples were built on sites occupied by earlier temples of the Middle Empire, and the temples of the Middle Empire themselves either replaced or included the shrines built in the first great stone-building age, when the kings of the Ancient Empire were on the throne.

What were the earliest Ancient Empire temples like? That is a question we may never be able to answer with any accuracy, but we possess some indications that throw light upon it. To begin with, we know that the shrine was the chief feature, and we know what that shrine was like, for its fossilised likeness is preserved as the Holy of Holies of almost every later temple. Thus the small temples at El Kab and Medinet Habu contain shrines which are in each case older than the adjacent courts and chambers. These shrines may themselves have replaced earlier crude-brick or stone shrines. A second important fact was deduced by Foucart from observation of existing later temples. All of them possess one marked characteristic. Entering them through the great pylon, and proceeding inwards from court to court and from chamber to chamber, there is a steady diminution in height the further you advance. The reason for this is plain. The normal temple plan resulted from a series of accretions. An Ancient Empire shrine received additions, mostly in front, in the Middle Empire, and successive further additions in the New Empire. Often, of course, the old parts were ruinous and had to be rebuilt, but, according to the general Egyptian way of doing things, the habit was to reconstruct the old parts on the old scale, and as far as possible in the old style, and to add the new parts in the new style. The Middle Empire built on a larger scale than the Ancient Empire, the Eighteenth Dynasty on a larger scale than the Middle Empire, and the Nineteenth larger than the Eighteenth. Thus a big temple, resulting from the accretions of various building periods, naturally grew in scale from shrine to pylon, and this feature was adopted into the style of temple design, so that even a wholly new temple was built in that fashion. From these considerations we may safely conclude that the Ancient Empire temples were small in scale.

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* *Dawn of Art*, p. 103.

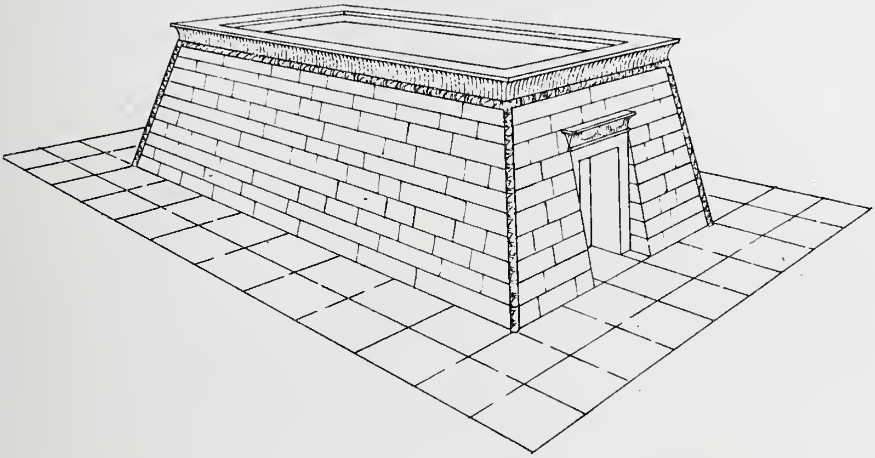
FIG. 10.—TYPICAL EARLY SHRINE TRANSLATED INTO STONE.

The best of them, the important royal temples, were probably built of the hard and precious rocks, such as granite, diorite, porphyry, and alabaster. Some of these are the materials used in the so-called Temple of the Sphinx. The few inscribed stones that remain to us from the ruins of Ancient Empire temples are mostly of similar substance. As under the Middle Empire, limestone was employed in conjunction with more precious materials. The quality of the materials employed formed no small part of the charm of the temples. Beautifully sculptured monolith rose granite columns must have been common. We have every reason to conclude that all the later types of column and capital were fixed at this time. The lotiform, palmiform, and campaniform or papyrus orders are all represented in the painted reliefs of the Ancient Empire. No doubt the sculptured details of all of them were better done at this early period than ever later.

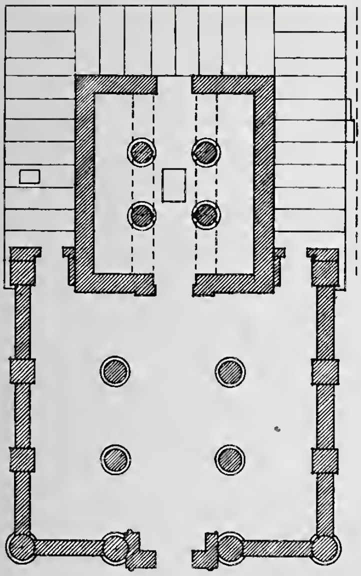
FIG. 11.—SMALL TEMPLE AT EL KAB.

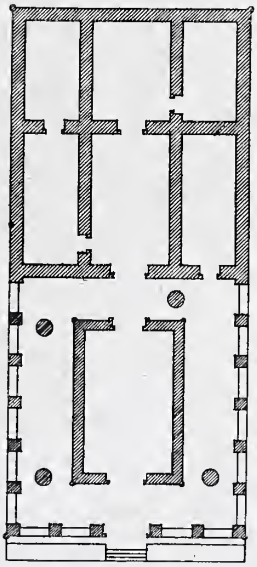
FIG. 12.—SMALL TEMPLE AT MEDINET HABU.

The recent German excavations have revealed the chief part of one Fifth Dynasty Divine temple to which we must pay brief attention. It was built near the Abusir pyramid-field by the King Ra-en-user in honour of the sun-god Ra. Instead of a shrine its chief feature was an obelisk raised on a massive base covered with great blocks of granite at the foot, and with fine, white limestone above. This obelisk was the principal object in the rear part of a large court. Before it stood a splendid alabaster altar or table of offerings, which appears to have been surrounded by some sort of wall or balustrade. At one side of the court was a row of ten great alabaster basins. The rest of the court seems to have been open except at the foot of the obelisk, where there were some beautifully decorated chambers. The temple faced east. There were a row of store-rooms along the north side, and a covered passage all round. Fragments of clustered columns show that there was also a colonnade within the court. The outer walls were built of big blocks of hard, yellow limestone. The inner walls were badly built but covered with plaques of finest limestone carved with delicate reliefs above a dado painted black. These wall-plaques of fine stone applied to coarse masonry no doubt descend from the old facing of tiles applied to crude-brick walls. At important points the base of the decorated walls was of granite. The ceilings were painted with yellow stars on a blue ground. The relief carvings were admirable, in the style of the best reliefs in the almost contemporary tomb of Ptah-hotep. The subjects represented were the foundation ceremonials, the *sed* festival, the seasons of the year bringing gifts to the sun-god, the king making offerings, and so forth—the usual style of temple decoration at a later date. There is a charming schematic representation of the Nile, with trees and plants on its banks, and birds flying above lotuses.

It is to be noticed that this temple is built over remains of earlier crude brick buildings. Our misfortune is that it should chance to be a temple with an obelisk instead of a shrine. We may conclude from it that the contemporary shrine temples likewise stood in peristyle courts and were supplied with a number of store-rooms. There is as yet no sign of any hypostyle hall, such as formed an invariable part of a temple of the New Empire type.

The great temples of the New Empire were adapted to the elaborate ritual of a period of priestly dominance. If a purely priestly class existed under the Ancient Empire it occupied a subordinate position in the State. The days of the Ancient Empire, especially of the Fifth Dynasty, were a pious period. This is not merely shown by the energetic temple-building, but by the tomb inscriptions of individuals, in which mention of some ecclesiastical activity of the deceased is common. The chief people of a place took the lead in temple ceremonies. Men who did nothing else but attend to a temple seem to have been mere servants, with one or two very high exceptions, such as the priestly colleges of Heliopolis and Memphis. The Uebs, Cherhebs, and Prophets, that is to say the chief temple officials, were what we should call leading laymen.* Under the Middle Empire the laity were less closely connected with acts of public worship; after the Eighteenth Dynasty they took no active part in them at all. The laity were gradually and at last completely ousted from the temple services, and their place taken by an ever more numerous priestly caste. Hence the temples of the Ancient Empire were not called upon to provide the kind of accommodation that became necessary later. There are indications that the early dynastic Egyptian ritual was chiefly processional. The actual Ark of the God was a boat, evidently implying the idea of motion from place to place. Hence the earliest dynastic shrines had doors at both ends, and, as Petrie says, were mere resting-places for the ark. Ark-shrines even in very late days were surrounded by a corridor. An ordinary early temple, therefore, probably consisted of a shrine, open at both ends, with a pavement outside all round for the procession,* and a courtyard all about. A portico before the shrine, or all round the courtyard, may have been an early addition. The hypostyle hall was added later.

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* It is noteworthy that the Ra temple at Abusir is connected by a ramped roadway with the neighbouring walled village or town, indicating the close connection then existing between the temple and the folk.

The last point we have to consider is the character of the sculptured decoration applied to Old Empire temples, and the system of its distribution. No Egyptian sculpture in the round ever surpassed, though lost earlier work may have equalled, that of the Fifth Dynasty, as the famous Scribe of the Louvre still sits to manifest. The mural decorative sculpture of the Old Empire was correspondingly excellent as far as it went, but it suffered from a great defect that sculpture in the round escaped. It was governed by faulty Egyptian perspective. A figure in the round could be absolutely copied from Nature, but a figure in low relief could only be truthfully represented by the aid of conventions not yet invented. An Egyptian artist knew no other way than of drawing a head in profile, the trunk below as though seen from in front, and the legs again in profile. We soon grow accustomed to this strange treatment, but we cannot like it. Art, however, can override all conventions and blossom in spite of the faultiest. Quality of surface is the great test of bas-relief. The best Fifth Dynasty work in this kind is sometimes good, though seldom to any high degree. The best result is attained when the artist treats vegetable forms, especially thick growths of lotus and other luxuriously growing plants. It is evident that he relied strongly upon colour for decorative effect. Where the colours have survived an excellent effect is obtained. It is necessary to imagine these sculptured plaques under the circumstances for which they were made. The wall-space above the plain dado was a great sheet of faultless chalk-white limestone, on which the figures and other objects were brought out in bright spaces of flat colour laid upon low reliefs. The effect cannot but have been excellent, especially when the white walls were set off by colonnades, architraves, and doorways of rose granite finely polished. Hieroglyphic inscriptions at this time were sparingly used, and the individual signs cut with detailed care. There were none of those clumsy, huge, sprawling inscriptions wherewith the bombastic Pharaohs of the Nineteenth Dynasty shouted from all over the walls and columns of their own temples, and such earlier ones as they left standing. The Old Empire architects and decorators understood the value of finish, delicacy, and reserve.

Bear in mind that the Egyptians attained to perhaps the most perfect comprehension of how to design and carry out a decorative scheme in one logical style ever attained by any people. Every form they employed, whether in their architecture or their sculpture, their paintings, their writing, their decoration of every object large or small, employed for whatever purpose, was the consistent outcome of a single artistic ideal. All parts therefore harmonised together, if scale and position were aptly chosen, and under the Old and Middle Empires decorators were masters in the aptness of such choice. Take any example of Egyptian decorative art (not architecture only) of any good period down to the Eighteenth Dynasty, and you will find this to be true. The Papyrus of Ani, for instance, is an easily accessible example in the admirable reproduction of it which is within the reach of all. Open it at random—say at the last plate or the last but one—how satisfying is the whole regarded as a decorated surface! what could possibly be better? This characteristic, common to practically all works of art in the Egyptian style, must have been impressed upon the style itself at the period when it came into being, that is to say, under the Old Empire.

If more Old Empire temples had been preserved—indeed, if any one such temple had been preserved in any sort of complete state—it is probable that we should rate far more highly the artistic product of Egypt, even than we do to-day. Every one of the great temples now standing on the banks of the Nile was built at a time of decadence. Not a single one survives from any of the developing periods, those, namely, of the Fifth, the Eleventh, and the Twenty-sixth Dynasties; all that is left of them is ground plans and fragments. It is a strange misfortune. In spite of it Egypt has impressed the prestige of its mighty name as a country of great buildings and noble art upon the imagination of succeeding generations. We are only now beginning to realise that the reputation of Egypt as an ancient artistic nation, so far from being exaggerated, does not attain the level it deserves.

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* This pavement may have been covered in by a portico at an early date, thus producing a peripteral temple.

DISCUSSION OF SIR MARTIN CONWAY'S PAPER.

The President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair.

Mr. R. PHENE SPIERS, F.S.A. [*F.*], said that Sir Martin Conway's Paper not only brought them up to date with the latest discoveries, but it was the first time that an attempt had been made to fix an approximate period for the commencement of a style of architecture in Egypt. Of course there might be some difference of opinion as to the point at which that would begin. Sir Martin had mentioned the fact that the earlier tombs were imitations of the palace or the residence of the deceased, that they were cut in stone, and that they were cut in imitation of the houses or palaces which were built either in reeds or in crude brick. The question arose, when the structural necessities of one material were translated into stone that did not require those peculiar forms, was that an architectural work? It was symbolic work, no doubt; but because the gradual imitation of those forms had led to architectural forms, that did not constitute architecture. They began by copying one form, then they decorated it, and then it became an architectural feature. It was difficult to decide at what period the building might be looked upon as of such good proportions, and of such refinement of design, as to constitute an architectural building and not an ordinary building. As regards the columns, rendered with such exaggerated slenderness in the hieroglyphics and other representations, there were still in existence columns of extremely slender proportions—more so, probably, than the one at Abusir—in some of the tombs of Beni-Hasan. It occurred to him when he first saw those tombs that it was an attempt at an imitation of the interior of a tent. The columns were carved out of the solid rock with the decoration of flowers which were placed on the tent-posts. Those columns seemed to him quite as slender as the very early one Sir Martin Conway had mentioned, and which seemed to be even more beautifully detailed than the columns of Beni-Hasan. The date of the column referred to by Sir Martin Conway was 3600, whereas those of Beni-Hasan were about 2600, a difference of 1,000 years. Sir Martin had pointed out that in one of the late temples discovered by the Germans the columns were evidently those of the papyrus and not of the lotus. He should be glad to know the difference between a papyrus and a lotus column. He had always thought that the series of columns bound together were all lotus plants, and that at times the capital, instead of being a series of lotus buds, had the papyrus flower planted on the top which constituted the bell-capital. He was not over-willing to accept the tent-peg theory of Professor Petrie until he saw a representation of the hieroglyphics of the tent construction, in which a form was represented which was almost identical with the capitals of the Palace of Thothmes at Karnak. The reason he had always assumed that those capitals were turned upside down was because the clerestory window was above the level of the capital. If the light was above the level of the capital the artist might have thought the decoration would be better seen if the capital were turned upside down. Professor Petrie agreed with that view. He thought Sir Martin was quite right in saying that there was no wooden construction; but the question was whether the outsides of some of the richer buildings, the palaces for instance, were not covered with a framing of timber, because, after all, if they accepted the fact that they were of reeds, why were the reeds square? He thought there was a tendency to cling a little too much to Perrot and Chipiez' theory that the woodwork was framed outside. Sir Martin Conway gave two periods—the wattle and mud and reed, and then the crude brick. He (Mr. Spiers) had not thought there were two periods: he thought the crude brick was likely to be quite as early as the other, but that was a question not possible now to determine. Sir Martin Conway might have insisted more on a very important fact. Those who had not been to Egypt were unaware that almost all the modern buildings up the Nile suggested in the distance ancient temples. As one approached a village one saw magnificent piles, which turned out to be only pigeon-houses. All the walls were obliged to batter: they must have a very wide base in order to support the brick above them, and that necessitated that they should batter either side, and that batter was copied in stone. It led to many singular results as regards doorways and other things. Then the reeds which came round it were the reeds protecting the edges of the building, also in crude brick. The cornice Sir Martin called the "gorge"—a term taken from Perrot and Chipiez' work—was best known to them as the cavetto, or cove-cornice. The term was used throughout the translation, and he supposed that was the reason it had never come into use. He had much pleasure in proposing a hearty vote of thanks to Sir Martin for his excellent Paper, and also for the interesting slides with which he had illustrated the subject.

Professor BERESFORD PITE [*F.*] said it gave him great pleasure to second the vote of thanks to Sir Martin Conway for his very interesting Paper, to the discussion of which he was afraid he could bring nothing but a certain spirit of inquiry which was aroused on that interesting evening when Professor Petrie read what Sir Martin described as his epoch-making Paper. If he remembered aright, in that discussion Sir Martin, whom they then had not the gratification of greeting as the Slade Professor of Fine Art at the University of Cambridge, interjected the observation—he believed it was a passing interjection in debate—that all styles proceeded on the basis of imitation, the imitation of some other method of building in another material. He prophesied to himself on the present occasion an interesting controversy between the Slade Professor of Fine Art and the editor of their best known architectural journal, who he believed on the occasion of Professor Petrie's Paper took a very different view. He did not know whether he was right, but he had his suspicions that the Paper that evening had been prepared with that militant intention, and that the thesis which had been so clearly put before them had been prepared with a view to attack. He was not going to attack it. He would not say that the thesis appeared to him incapable of attack, even in the presence of what they knew as to the development of Greek architecture, and the strange delight which the Greeks seemed to have taken in imitating, in glorious building material, constructions of an inferior material following the lines which Sir Martin had so clearly laid down with regard to the progress of the Egyptian style. They turned their minds westwards, and found that they were living in an empire, the Western Empire of ancient Rome, in which a magnificent architecture grew up in masonry, out of nothing but masonry. Only in a very indirect—he was going to say only in a very theoretical—manner could it be supposed that Gothic architecture owed anything to imitation of preceding methods of construction in another material. In some decorative details they traced the illustration of a form seen in other countries; in Gothic capitals they traced representations of the acanthus and volutes, in France and in some parts of England. But English architecture grew up and developed by a delightful combination of architecture and building, which Sir Martin described as building to give pleasure—a sweetly simple phrase which they ought not to forget. There was singularly perfect engineering in English mediæval architecture and a singular refinement of form combined. Might Heaven send them such another period! But in Egypt there was a high constructive ability, a high technical ability in the working of stone, instanced by that temple of the Sphinx, the one Egyptian temple he had seen; his hair almost stood on end when Sir Martin Conway put on the screen one of his (the speaker's) drawings of it. He made that drawing for Professor Poole many years ago, years before he saw the temple; and as to the proportions of it, it was traced from a French plate, spoilt by the absurd sheik in front. But they found that very fine dealing with stone had no relation at all to æsthetic value. Apparently, at a much later period, the æsthetic period harked back to what he might call the childish delight of imitating one material in another; that expression of pleasure seemed to be the only *raison d'être* for the perpetuation in masonry, glorious masonry, of the crude forms of rush and mud. There were a number of ideas that Sir Martin Conway had gleaned and put together for them, ideas which it was a little difficult to relate in a hurry. The relation to the tent was dissimilar essentially from the relation to the rush hut. The rush building, again, was dissimilar in method from the sun-dried brick building. They had the tent-peg column, they had the batter wall, the cavetto, the torus from the rush and mud, and then they had the niche, the recessing from the brick construction clearly. That those methods of construction existed side by side, and died, that they were replaced by a massive unadorned stone construction, and that then at a later period an æsthetic instinct went back and collected from the rush and mud, and from the tent, and from the unbaked brick material for expression, was a vastly interesting statement. He hoped it would not be attacked successfully. It opened up a new vista of the operation of the architectural mind. Well, they lived in a period when the architectural mind had to operate in various different ways. Sir Martin Conway skilfully drew their attention across the Atlantic, where they were building, with steel and something else, but mainly of steel, an architecture to suit the expansive imagination and expanding pockets of their American brethren. But that steel work was imitating and adopting—for it could do nothing else—the methods, the detail, the forms, of the effete architecture of the Western Roman Empire in stone. It would be interesting to cast a prophetic eye forward to the day when some New Zealand Slade Professor of Fine Art would come along and unearth this exceedingly interesting problem of why and how their brethren across the Atlantic succeeded in putting their minds back behind the vast possibilities of beauty of iron work which had been developed, and laying hold of the decaying remnants of a stone architecture which was destined to vanish, just as the rush-and-wattle architecture of Egypt had vanished, and crystallising its work, preach to an audience of ladies and gentlemen in the dim future on the operation of the architectural mind!

Mr. E. W. HUDSON [*A.*], in supporting the vote of thanks, said he was struck with the great advance made in our knowledge of the subject in the last ten years. It was very noticeable by those who had not kept pace with recent thorough researches, but only remembered reading the immature conclusions of writers half a century back and the superficiality of early exploration. The remote date fixed by the ancient Egyptian priesthood was not received, but on the other hand no such antiquity as that now attributed to Egyptian building was suspected. The fictitious date of the first *god-kings'* reign (17,570 years B.C.) was only conceivable by assuming that the early year was a *month* of our time, and so arriving at 1464 B.C., or about the period Jacob is set down (by Archbishop Usher's chronology) as erecting a stone pillar on Mount Gilead. It was felt that Herodotus was drawing the long-bow, that nothing was known for certain further back than the reign of Psammeticus I. in the seventh century B.C., and outside the Old Testament nothing definite was to be obtained. Now, however, the lowest stratum of antiquity was mined and the spring of history tapped. Professor Flinders Petrie in the Paper read before them two years ago had given a date *c.* B.C. 4800 to mud and reed huts, which was 800 years before the alleged date of the creation of the world, and stated that at the same period marble and limestone in carved tombs were in use, and 500 years later stone was used for buildings, and was even hammer-dressed. It was noticeable that the domed hut shown by Professor Petrie* had never been imitated in stone, like the trabeated conversion of the flat-roofed hut. Yet the barrel vault was used in Egypt, B.C. 4200, in what seemed a cave-like building, but never, so far as he knew, developed into roofing for covering exposed buildings. Another point had struck travellers, viz. the similarity between Egyptian and early Indian temples, and he would much like to hear Sir M. Conway's views on the relative influence of one on the other. It was formerly thought that the Eastern design influenced the West, instead of *vice versâ.* When the first Sepoy soldiers were sent to Egypt to help the British early last century they could not refrain from celebrating their religious rites in the temple, as they would have done at home. Hermopolis and Elephanta had been often compared. It was thought that, "though it was not possible to say how ancient either might be," yet the cavern temples were the originals, and the heaviness of Egyptian work attributable to the idea of its having to bear superincumbent rock. That the later Indian styles were affected from the West by Classic influence had been shown by Mr. William Simpson's Papers in the JOURNAL,* but he was not aware of any one bearing upon the origin of the early Indian temples. Another reason advanced for the heavy style was that the Egyptians, among all their deities, entirely ignored the Graces. The additions made to small temples or to a mere shrine, increasing size and importance, as shown in the plans just exhibited, was an interesting point, for the same thing happened in the early Christian edifices. The addition of a narthex or cloister court in front of an adapted building was a very general expedient. The Romanesque crypt, also, might be a perpetuation of the same idea, being inclosed later by a superstructure on a nobler scale to accommodate more worshippers. The subject was most extensive. but the present Paper and that by Professor Petrie together made a very valuable record.

Mr. R. F. CHISHOLM, F.S.A. [*F.*], said that there was the greatest possible similarity between the temples of India and Egypt. The temples were not only the same, but there was the same idea of the spirit of the departed visiting the tombs. In a mausoleum he had had to go into in Baroda he found a couch, a small dressed figure, and a plate of rice. The couch was for the spirit of the departed to recline on, the figure to give it corporeality, and if hungry it could eat the rice. The idea seemed to be exactly the same, but to show the connection between them would take a very long time. The subject was an exceedingly difficult one.

Mr. HUGH STANNUS [*F.*] said he would wish to add his thanks to those which had been tendered to Sir Martin Conway. He had been much interested in all that Sir Martin had said; but he had touched upon so many points of interest that it would be perfectly impossible—in fact, he would rather guard himself from beginning to speak about them, for if he began it would be difficult to know where to stop. He (the speaker) had brought with him that evening a few of the photographs he had taken while in Egypt last season, through the favour of Professor Flinders Petrie, thinking they might perhaps help Sir

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* Vol. VIII. 3rd Series, p. 342, fig. 1.

* Vol. I. 3rd Series, p. 93.

Martin in his demonstration about the evolution of the column. He showed three examples of the sixteen-sided shaft, the first one being at Beni Hasân, the second at Dêr-el-Bahri, and the third one in the halls by Tehutmes III. near Karnak. The next photograph showed what was late in point of time, but very early in point of design, that is, the square pier, which was used in that very interesting granite temple near the Sphinx. The example shown was from the temple of Sety I. at Abydos. The view showed a couple of the piers in front of the temple. The architect had carried out the same idea as in the granite temple near Gizeh ; he further utilised the square piers inasmuch as they gave such splendid opportunity for storiation. There were twelve such piers, and photographs were taken of the whole set. They gave almost an epitome of the Egyptian Pantheon at the time—that is, in the Nineteenth Dynasty. The next photograph showed the very interesting columns of Tehutmes III. near Karnak, to which Sir Martin Conway alluded, which was no doubt the translation into stone from a tent-pole original. The next photographs showed the development of the lotus-bud top from the Twelfth Dynasty example, in which the buds were actually separate, with the five fasciæ tying them, and with the smaller buds tied-in between them to fill up. Also in the front of the temple near Gurna, and in the temple of Sety at Abydos, where was seen the combination of the two kinds of tops and the two kinds of shafts. He hesitated to use the word "capital" for a reason he would speak of presently ; but he would draw attention to the inner row of columns that immediately faced the seven great sanctuaries. The columns of this row were almost cylindrical in profile and almost circular in plan, except that there were narrow flat bands for hieroglyphics down each side. The other rows of columns were decorated with the original lotus-bud treatment. Another photograph showed Sety's columns in front of the temple near Karnak, not yet excavated. It would be observed that the original natural flower prototype became gradually forgotten in process of time. The profile was retained, but the surface was first smoothed, and then it was treated as a field for storiation. The photograph of one of the side avenues in the Hall of Columns near Karnak showed how those upper portions were storiated with the names and the titles of Sety in some cases, and his son Ramessu II. in others. When it got to that, it was evident that the original idea of the column and its decoration by flowers was forgotten, and the whole of it was freely treated as so much surface to be storiated. The next three photographs showed the evolution of the Hathor treatment; but as Sir Martin did not deal with those he would pass them by. The last photograph showed the use of a Ptolemaic capital in a mosque at Cairo. With regard to the five ligatures which had been spoken about, there were always five, as if there were some idea taken from the fingers of the hand which would grip the flower-stems while they were being tied, and the number *five* may have dwelt in their minds. Those five were evidently ligatures, because in some columns the loop of the tie was shown as hanging down. He would like to say one word about Professor Conway's use of the word "capital." When preparing his Lectures, some twenty years ago, he thought it was a misnomer in Egyptian architecture. Probably the old Egyptians had no idea that they were making a "capital." It was not as if the architects had said to themselves in those early times, "Go to, now, let us make a capital," and behold they made a capital, and behold it seemed unto them very good, and behold it was a capital idea, and behold they said, "Let us call it a capital." There was nothing of that kind about it. The only idea, so far as one could judge in considering the matter, was that they had what, if Sir Martin Conway would allow him, he would say was a squared wood pillar (timber rather than a tree, because it was *square* at the top). At the Festival of the Great Nile Overflowing—to which the great prosperity of their country was due—they would decorate these shafts that supported their buildings (whether they were their houses or their temples) with bouquets or nosegays of the lotus flower, which, by reason of its great abundance in an overflow of great abundance, became symbolic in the minds of the Egyptians of the goodness of the gods. They decorated the upper part of the shafts with these bouquets, putting one on each side, and tying them round with the five-fold band before noticed. They were not thinking of making a "capital," but of thanksgiving for the goodness of the gods, in decorating the country, as they were now decorating their houses. The reason for the early choice, of the bud rather than the flower, was obvious : the lotus at some times is in bud and at other times is in flower, so that the architect, when he desired to perpetuate the bunches in more permanent material for the houses of the gods, would have the choice of the two : firstly the bud treatment, and secondly the open-flower treatment. The bud treatment required a less quantity of granite ; and while they were using granite he had no doubt they chose it rather than the open flower. He thought Sir Martin Conway would tell them from his knowledge of Egypt whether there existed any granite shaft head which imitated the large open flower. For his own part he knew of none such. He knew the open flower was used in the Eighteenth and Nineteenth Dynasties, but then it was cut in *sandstone*, and not in granite. He fancied that, the size of the flower being so very much larger than the shaft, it would have been a great waste of material, whereas they saw that the bud was very much the same size as the shaft, and therefore, as the granite columns were made monoliths—*i.e.* in one piece—they saved, not only the waste of material, but also the waste of the workmen's time, in cutting it, in keeping to the bud treatment. In either case it was symbolic of the goodness of the gods, and he thought that the use of the bud motive was just what one might term a reason arising out of the nature of the material. There were many points that he might have touched on if there had been a blackboard, and he might perhaps have made the matter a little more clear; but he trusted that they would take his expression of the pleasure with which he had listened to Sir Martin Conway instead. It was very interesting to them to find learned gentlemen like him, who had got very broad views of the whole branches of human activity in the sphere of art, collecting—or gleaning, as it had been so happily termed—all this information; and giving the quotations from M. Foucart and Dr. Petrie the *imprimatur* of his approval.

THE PRESIDENT, in putting the vote of thanks, said that the members of the Institute were most fortunate to have had this Paper read to them. It would no doubt be called an epoch-making Paper in its turn later on. They had had two such Papers this Session, one from Dr. Evans on the Palace of Knossos in Crete, and now Sir Martin Conway's on the early architecture of Egypt. Personally he had no knowledge of the country and had not studied the subject, so that he would not take up their time by making any remarks upon the Paper. None the less he felt that he was expressing the feelings of all in saying that they were greatly indebted to Sir Martin Conway for his excellent Paper, for the great research it evidenced, and for his kindness in coming to the Institute to read it.

SIR MARTIN CONWAY, in responding, replied to some of the points raised during the discussion. As regards the papyrus and lotus column, the difference between the bundle of papyrus stems and the bundle of lotus reeds was that the papyrus stems were always, roughly speaking, triangular. He should have pointed out on the slide that that must be a papyrus column owing to the well-marked ribs, the angularity of the individual stems. It was not necessary to assume that the rectangular forms of the façade decoration implied the use of wood; crude bricks naturally lent themselves to that form of decoration, as the Naqada tomb showed. There the whole of the grooving was rectangular in section because it was simply formed by the natural angles of the bricks, the bricks being thrust forward or withdrawn. That kind of rectangular grooving was characteristic also of the early crude-brick architecture of Chaldæa. It was a very important link between the earliest architects of Egypt and Chaldæa that both should have decorated externally their buildings in a similar way. As to any connection between the architectures of India and Egypt, he should not like to make any affirmation. All the stone work of India that they knew of was quite late compared with Egyptian architecture. He did not think there was any stone building in India known of until after the invasion of Alexander the Great, and by that time Egyptian architecture had practically come to an end, so that there could be very little direct connection between them. There was no instance of a stone dome in Egypt. The dome in mud appeared to have been employed on a small scale in Egypt as well as Mesopotamia, *i.e.* they had dome-covered corn bins and possibly other small buildings, but no building of any size that they knew of. The origin of the dome was one of the great unsolved problems of architectural history. He quite agreed with Mr. Stannus in what he had said about the Egyptian capital. Those were not, strictly speaking, capitals. In almost every case—in the case, he thought, of all the earliest columns—the capital was part of the monolith out of which shaft and capital were cut in common. It was not a separate member; it was merely the upper part of the column. One called it the capital for the sake of convenience of description merely. It was not, strictly speaking, a capital. Probably, all the Ancient Empire stone columns were monoliths, and so he thought they were in the Middle Empire. It was not till the New Empire that columns were found built up of drums. As to the nosegay decoration, he should not like to say much. It would be very nice to agree with it, and the greatest authority, M. Foucart, was at one with Mr. Stannus in the belief that the idea of those floreated columns was taken from some floral decoration applied to columns either of assembled reeds or occasionally, perhaps, of wood on festal occasions. The trouble was that in all the earliest columns they knew of the weight was laid straight on the top of the bud, and that could never have been any decorative feature derived from a real use. He thought they would have to wait before they could determine the origin of the idea. As to the use of forms translated into granite, they knew of the lotus bud in the very earliest period as used. There was also the palmiform capital carved in granite in the Fifth Dynasty Temple of Unas. Other forms were doubtless employed simultaneously with these, as small decorative objects proved, but no other ancient originals had yet been found. He regretted that he had had a great deal more to say on the subject than a single Paper could contain. Moreover what he had written was itself too long to be read properly. He had to race through it instead of explaining details that he ought to have enlarged upon, and, therefore, he had put the subject before them un-favourably and incompletely; but the object of his Paper was to suggest inquiry rather than to attempt to solve finally any problem.

Mr. R. F. CHISHOLM, F.S.A. [*F.*], writing on the 19th inst., says:—I should like to add to the remarks I made last evening that the fact of the similarity between early Egyptian temples and early Indian temples is of interest because of the great lapse of time between the periods of construction. It tends to show a greater unity in all religious beliefs than one would at first imagine. All seem to be based on an unseen Spirit or Principle of existence to be propitiated by sacrifice and approached through mediators. This is the golden thread which binds all men in mental brotherhood, from the savage who supplicates his own hand-made fetish, to the pure spiritual teaching of Jesus Christ; and it is therefore of high interest to note the similarity between temples separated by such an enormous lapse of time as six or seven thousand years! Apart from this point, however, although even the earliest of the rock-cut temples is fourth or fifth century work, these temples are types of structural edifices, entirely obliterated, which may have taken many centuries to perfect. We have evidence in India that in the early Christian era the arts of Arabia (Egypt) on the one hand met those of China on the other; why should this process not have been a continuation or repetition of what obtained in more remote ages?

THE ROYAL INSTITVTE OF BRITISH ARCHITECTS 1834
INCORP. 1837 1887

9, Conduit Street, London, W., 23*rd May* 1903.

CHRONICLE.

The President's "At Home": Nesfield's Drawings.

The second of the President's "At Homes," given at the Institute on Monday the 11th inst., was but little less crowded than the January one, and the occasion was in every way as successful and agreeable, and equally appreciated by all present. On view for the evening was a numerous collection of designs and working drawings of the late Mr. W. Eden Nesfield. The Institute is indebted for this exhibit to Mr. E. J. May, in whose possession the drawings now are, and the Meeting last Monday passed a very cordial vote of thanks to him for lending the drawings and for the trouble he had personally taken in the hanging and arrangement of them. Mr. John Hebb contributes to the present number a brief memoir of Mr. Nesfield, together with a list of his works compiled by Mrs. Nesfield from her husband's account books. Everyone is familiar with the beautiful series of Nesfield's drawings, published in 1862, illustrating mediæval architecture of the twelfth and thirteenth centuries in France and Italy. Through the exertions of Mr. R. Phené Spiers a sum was raised a few years ago to purchase for the Library almost the complete collection of the originals of this famous series and a number of other drawings and sketches. Nesfield's student life and work as a draughtsman formed the subject of an article by Mr. Spiers in the Journal for 22nd August 1895 [Vol. II.]. The illustration which accompanied the article, representing a pencil sketch of the Earl of Leicester's "Hospice," Warwick, affords a good idea of the delicacy and refinement which characterised Nesfield's work.

Abergavenny Free Library Competition.

In this competition, limited to architects practising in Monmouthshire, not only is there no assessor, and not only do the conditions state that no pledge is given that the architect whose plans are selected will be employed to carry out the work, but competitors are asked to state at what commission they would undertake the entire work, including the furnishing of bills of quantities; and the magnanimous corporation "*do not bind themselves to accept the lowest* or any offer." It is to be hoped that unless the conditions are radically altered members of the Institute will leave this competition severely alone.

Liverpool Cathedral Competition.

The Times of the 16th inst. reported that the Liverpool Cathedral Executive Committee, after careful consideration of the plans sent in by the five selected architects, Messrs. Austin and Paley (Lancaster), Mr. C. A. Nicholson, Mr. Gilbert Scott, Mr. Malcolm Stark, and Mr. W. J. Tapper, have decided not to accept any of them. It is recalled that in drawing up the conditions of the competition the Committee made a strong point of securing ample accommodation within sight of the preacher for a large congregation in the proposed Cathedral. The design (No. 1) approved by the advisory architects does not appear to the Committee capable of fulfilling this condition.

The following is the advisory architects' report:—

"Gentlemen,—We have carefully inspected the five sets of designs submitted in competition for the proposed Cathedral at Liverpool.

"It is with much pleasure that we bear our testimony to the great care and pains that the competitors have bestowed on their work, and the admirable response they have made to the invitation of the Committee.

"The drawings, as drawings, are most excellent, and show skill in the working out of many difficult problems.

"Almost without exception we see the hand of the master himself and not merely draughtsman's work. This makes the designs doubly valuable.

"Out of the five competitors, four of them had sent in designs for the Cathedral in the first and unlimited competition. We note, with great interest, that the new drawings embody much general design and character as previously delineated by each competitor. This clearly shows that from the commencement all the four had decided views, and that the second competition proved no temptation to any to deviate materially from their original conception. This seems to us good evidence that from the commencement they had offered of their best.

"You may be sure that we, your assessors, feel the great responsibility of our judgment and the importance of this very rare occasion.

"What we had to find was not the best or the most beautiful drawings, but the best idea and the finest conception.

"Many of the drawings are attractive. But we had to look much further than that. We had to look at the real effect of the building rising to its final completion, at the dimensions and proportions of the different parts, such as the piers and arches of the great nave. We had to look at the practical and feasible aspect of the designs. We had to look for a sufficiently original conception. We had to look for a fine and a noble proportion, combined with an evident knowledge of detail. Lastly, we had to look for that power, combined with beauty, that makes a great and noble building.

"In the set of drawings marked 'No. 1' we find these qualities pre-eminently shown. We cannot but give it the first place.

"We should recommend that the *quasi*-east end should be drawn with the towers shown, and that a window of fine size and proportion should be shown for the gabled end, one suitable to receive the offered gift of stained glass, a gift that will greatly add to the beauty of the interior.

"We are, Gentlemen, faithfully yours,
"R. NORMAN SHAW, R.A.
"G. F. BODLEY, R.A."

Reinstatement.

At the meeting of the Council held Monday, 18th May, Mr. Ernest O. Cummins was reinstated as an Associate of the Royal Institute.

REVIEWS.

THE AMERICAN VIGNOLA.

The American Vignola. Part I. The Five Orders. By William R. Ware, Professor of Architecture in Columbia University. La. 4o. Boston. 1902. Price 12s. 6d. [The American Architect and Building News Company, Boston. London agent: Mr. Batsford, 94 High Holborn, W.C.]

This work by an Honorary and Corresponding Member, Professor Ware, has been compiled by him to serve as an elementary text-book for the use of architectural students in the United States, and is the outcome of long experience in the class-rooms of the schools of architecture which Professor Ware inaugurated in Boston and New York.

Vignola's orders have always been regarded in the French school as embodying the best interpretation of the Roman orders, not only in their general proportions, but in their refinement of mouldings and detail, and we gather from the preface—first, that these orders have also generally been accepted as the standard in the United States, in preference to those of Alberti, Scamozzi, Serlio, Palladio, and Sir William Chambers, of which those by the last two have been followed in England; and, secondly, that when the late Mr. Richard Hunt (the first American student who entered the Ecole des Beaux-Arts in Paris, viz. in 1846) returned to Boston he started a studio in Tenth Street to impart to his younger *confrères* what he had learnt in Paris, and, as Professor Ware says, "setting aside the whole apparatus of modules and minutes, he showed me how to divide the height of my capitals into thirds, and those into thirds, thus getting the sixths, ninths, &c., of a diameter which the rules required without employing any larger divisor than two or three." In the French school, at all events, for sixty years, all the proportions are based on the *diameter* of the column; and the principal features, such as the architrave, frieze, and cornice, having been set up, they are divided and subdivided by divisors of two or three until the smallest fillet or bead has been calculated, it being found easier to recollect, for instance, that the fillet above the cyma in the Doric cornice should be one-third of the cyma than two minutes of the module.

The work is illustrated by eighteen plates, which have been specially redrawn; of these thirteen are devoted to Vignola's orders (unless when otherwise stated), two to the Greek Doric and Ionic orders, and three others to pedestals, pilasters, pediments, superposition of columns and intercolumniation. We note that the employment of the orders with arcades between, which formed, perhaps, the only invention of the Roman architects, has been omitted, and with it, of course, the pedestals which have always been a stumbling-block to students, and which really constituted no part of the order as employed by the Romans; and there is no loss in their omission; but we think, on the other hand, that it would have been safer to give plates of the Roman orders (on which Vignola based his own interpretation) instead of those of the Greek Doric and Ionic, reserving these for Part II. of the work. The proportions and principles found in the latter are so widely different from those of Vignola that the student may become confused between the two.

It is evident that in the American glossary there are architectural terms which are different from those current in England. The terms "scrolls" and "filberts" are applied to those features which we call "volutes" and "bead and reel."

Mr. Partridge's system of employing the 60° angle for the setting out of the dentils and the modillions is ingenious, but it does not seem in the latter case to have been adopted by Vignola, and it is evident that in a cornice of great projection crowning a building the bed-mould would require to be much deeper, so that the theory would no longer apply.

The analysis and description of Vignola's orders should be of great value to the student, as it furnishes a complete glossary of all the architectural terms employed, with numerous illustrations of every feature. The perspective view given of each order in which two columns coupled together will respond behind them conveys to the student a clear idea of the actual effect of the column and entablature complete, though we should prefer to have seen the angle of a portico given instead, as the American student may imagine that these perspective views represent architectural features which may be stuck on as ornament to his building. R. Phené Spiers.

INTARSIA AND MARQUETRY.

Intarsia and Marquetry. By F. Hamilton Jackson, Examiner to the Board of Education on Principles of Ornament. With illustrations from photographs, &c. 8o. Lond. 1903. Price 5s. net. [*Sands & Co.*]

By the compilation of this work Mr. F. Hamilton Jackson has laid the student and the craftsman under some obligation. Both have long felt the want of a hand-book which would outline the history and describe the processes and technicalities of the craft.

Mr. Jackson has certainly not neglected the historical aspect, which absorbs no less than 103 out of a total of 145 pages comprising the work. These notes are unnecessarily copious owing to the mass of trivial and often wearisome particulars which load the pages. Is it interesting to know how many sisters one of the craft possessed, or whether they were older or younger than himself? Should the reader thirst for more details, he will learn that the father of the said craftsman was a mender of leather, and expired in the year 1460, leaving his family entirely unprovided for. The name of the street containing the shop where worked the surviving son is carefully chronicled, and the fact that he also slept on the premises. The reader who has taken pains to grasp these preliminaries will experience some chagrin when he discovers, towards the end of the paragraph, that all the work of the craftsman in question has long since perished. Mr. Jackson's zeal for the exhaustive has led him to mar his otherwise excellent work by a redundancy which in any future edition should be relegated to an exile appendical, or, better still, disappear entirely in favour of that only which is material to his subject.

In differentiating between Intarsia and Marquetry, the author deems it accurate "to apply the former term to those inlays of wood in which a space is first sunk in the solid to be afterwards filled with a piece of wood (or sometimes some other material) cut to fit it, and to use the latter for the more modern practice of cutting several sheets of differently coloured thin wood placed together to the same design, so that by one cutting eight or ten copies of different colours may be produced which will fit into each other, and only require subsequent arranging and glueing, as well as for the more artistic effects of the marquetry of the seventeenth and eighteenth centuries which were produced with similar veneers." The art is no doubt Oriental in its origin, as examples of both Assyrian and Egyptian inlay may be seen at the British and other museums. The Romans, and amongst them Cicero, admired the art to such an extent that from £5,000 to £15,000 was readily given for an inlaid piece of furniture. The great cost of the citron wood, which was such a prominent feature of the inlay, would account for such enhanced values. The mediæval craft seem to have relied on Oriental rather than Roman tradition, and the history of the art in Europe is illustrated by numerous and well-produced plates. It is also shown how the *intarsiatori* of the Renaissance were led to emulate the art of the painter, thus exceeding their true limitations. Pictorial effects were rendered with extraordinary realism considering the means by which they were obtained. The expensive nature of the work gave rise to the production at one sawing of a number of inlays of the same shape but of various colours. This process reduced the art to a somewhat commercial basis, and is known by the term of marquetry. There is also much good advice as to the first considerations and limitations of the art, whilst from the concluding, and, by comparison, all too brief chapters on practice and technique, interesting and valuable information may be gained by the connoisseur, the student, and the craftsman.

Leeds. BUTLER WILSON.

ANCIENT GREEK SCULPTORS.

A Short History of the Ancient Greek Sculptors. By H. Edith Legge. With an Introduction by Professor Percy Gardner. [*London: Fisher Unwin*, 1903.]

This little volume gives a readable and trustworthy account of the Greek sculptors, with a notice of their principal works. The best part of it is that which deals with the subject when it has come out into the full light of history in the period after the Persian wars. The earlier chapters are less satisfactory. At the outset the authoress hardly seems to take her theme seriously, and little attempt is made to grasp as a whole the phenomena of the first period of Hellenic art. The very instructive story of Dipœnus and Scyllis, for example, is not handled so as to bring out its significance, and the legend of Dædalus with which the book opens is treated in very flimsy fashion. The relations of the earliest schools, and especially the widely extended influence of the school of Ionia, would have repaid a more extended treatment.

On the other hand from the time of Calamis and Myron onwards the narrative is well given, and the little book may be cordially recommended as an introduction to a more systematic study of the subject, which may be carried on by the aid of such a text-book as Professor Ernest Gardner's *Handbook of Greek Sculpture*. It may be noticed, however, in connection with the important subject of the interpretation of the fragments from the Parthenon, that it is misleading to give one out of many conjectural identifications as if it were proved or even generally accepted. The supposition that of the three female figures commonly called the Fates the one nearest the centre is Hestia, and the other two Thalassa, the sea, reclining in the lap of Gaia, the earth, is a mere guess, and by no means a likely one; yet in the text it is treated as an established article of faith. The book improves as it progresses, and the account of the later sculptors leaves little to be desired. It is disappointing, however, to find that the writer's evident enthusiasm for Greek art has not suggested to her a higher standard of literary style.

Edinburgh. G. BALDWIN BROWN.

THE NEW ENGLISH DICTIONARY.

Architectural Terminology.

DURING the first half of the eighteenth century—the age of Addison and Steele, of Pope and Swift, of Dryden and Defoe—the English language had attained to so high a degree of literary perfection that it was thought by many that the time had arrived for the preparation of a "Standard Dictionary," in which should be registered the proper sense and use of every word and phrase, and from which no polite writer of English henceforth would be expected to deviate. The idea was laid before Dr. Samuel Johnson, who undertook to produce the desired work, which in due course appeared in the year 1755.

But it soon became evident that Dr. Johnson's Dictionary, although far in advance of any of its predecessors, was by no means perfect; and so, when, just a century later, in 1857, the late Dr. Trench proposed to the members of the Philological Society that materials should be collected to form the basis of a dictionary truly worthy of the English language and of English scholarship, the suggestion was immediately adopted. Several hundred readers at once set to work upon the task of selecting and transcribing quotations typical of the use of words from all the great English writers of all ages, and many eminent scholars undertook to arrange the materials thus gathered. Upwards of two million illustrative quotations were thus brought together and provisionally arranged; but it was not until 1878 that a definite prospect of making use of this vast amount of labour presented itself. In that year specimens prepared from the materials which had been amassed were presented by Dr. J. A. H. Murray, on behalf of the Council of the Philological Society, to the Delegates of the Clarendon Press, who consented, under certain conditions, to bear the expense of printing and publishing a dictionary on the lines suggested. The work was then taken up with renewed vigour; an appeal for volunteers to collect additional quotations from certain specified books was made, to which more than eihgt hundred readers responded, and in the course of three years a million additional quotations were obtained. At length, in 1885, the first part of *The New English Dictionary on Historical Principles* issued from the Clarendon Press, and volume i., containing the letters A and B, was completed in 1888. At the time of writing five volumes of this truly wonderful work have been published, and as it is expected that the whole will be completed in five volumes more, the end may now be considered well in sight.*

The labour involved in the production of this dictionary has been—and indeed still is—enormous. Some idea of it may be gained when it is said that in the volumes already published the total number of main words, each treated in a separate article, of special combinations explained under main words, and of subordinate words, amounts to no less than 148,753. And these five volumes, it must be remembered, contain only words beginning with the first eleven letters of the alphabet, so that fifteen letters yet remain to be dealt with. It may be added, as an indication of the magnitude of the undertaking from another point of view, that volume ii., which contains only words beginning with C, weighs 12 lb. 11 oz.

Interesting though these facts may be, however, they furnish comparatively little indication of the value of the dictionary as a dictionary. This is not to be judged by its size, nor yet altogether by the number of words which it records. Its usefulness must be measured by some other rule than mere bulk, which, indeed, is in itself a disadvantage. What standard, then, are we to apply? Dr. Murray, the editor, supplies it himself in the preface to volume i. "The aim of this Dictionary," he says, "is to furnish an adequate account of the meaning, origin, and history of English words now in general use, or known to have been in use at any time during the last seven hundred years. It endeavours (1) to show, with regard to each individual word, when, how, in what shape, and with what signification it became English; what development of form and meaning it has since received; which of its uses have, in the course of time, become obsolete, and which still survive; what new uses have since arisen, by what processes, and when; (2) to illustrate these facts by a series of quotations ranging from the first known occurrence of the word to the latest, or down to the present day, the word being thus made to exhibit its own history and meaning; and (3) to treat the etymology of each word strictly on the basis of historical fact, and in accordance with the methods and results of modern philological science."

After reading these words, one turns to the pages of the dictionary to see if this high aim has been attained; and, open it where one will, one is rarely disappointed. The crispness of definition, the care expended in indicating the pronunciation (so necessary in English, where the written symbols often bear no relation to the spoken word), the scholarship displayed in the treatment of the etymologies, and, above all, the wealth of illustrative quotations, at once place this dictionary far ahead of any other which has yet been produced in this or perhaps in any country.

The vocabulary of each man varies according to the nature of his business, his reading, his pursuits, and so forth; it widens out in those directions where his interests lie, and contracts in other directions with which he has no practical connection; and no lexicographer can be expected to record *all* the words which *every* man knows. It may sometimes happen, therefore, that the architect, whose vocabulary contains of necessity a very great number of technical and trade terms, may search the *New English Dictionary* in vain for some, to him, familiar word. Yet it is remarkable how few even technical and trade words have escaped the vigilance of Dr. Murray and his co-workers. Such—to the general reader—unfamiliar words as *bolection*, *arris*, *intrados*, *joggle*, *dog-legged stair*, *grouting*, and many more, are all duly recorded, defined, and illustrated by one or more quotations; and if one might venture any criticism it would not be that more words should have been included, but that the definitions of one or two which have been included might perhaps have been expanded with advantage, or that better quotations in illustration of their meaning might have been chosen. Thus *ball-flower* is said to be "An ornament like a ball enclosed within three or four petals of a flower, often inserted in a hollow moulding." This definition is copied almost word for word from the Glossary at the end of Gwilt's *Encyclopædia*; but there we read, after "hollow moulding," the important addition, "and is considered one of the chief characteristics of the Decorated period of Gothic architecture." This ought certainly not to have been omitted. *Flamboyant* is defined as "Characterized by waved lines of contrary flexure in flame-like forms (Gwilt): of the style prevalent in France in the fifteenth and first half of the sixteenth century." In amplification of this definition some such quotation as the following, from R. and J. A. Brandon's *Analysis of Gothick Architecture*, might well have been given: "In England this term is restricted to form or design in tracery; but on the Continent [to] . . . . the entire range of Gothick architecture at a period commencing with the decline of Decorated Gothick in England." *Flèche* is defined as "A slender spire, especially one placed over the intersection of the nave and transept." As this word is a comparatively recent importation from France it might not have been out of place to have given Viollet le Duc's definition in the *Dictionnaire de l'Architecture Française*: "Ne s'emploie habituellement que pour désigner des clochers de charpenterie recouverts de plomb ou d'ardoise, se terminant en pyramide aiguë." One notes that the earliest quotation given of the use of *Gargoyle* is dated 13—. The earliest quotation given in the Architectural Publication Society's *Dictionary* is dated definitely 1365. A *casement* is defined as "A hollow moulding, a *cavetto*, not exceeding a quarter round." This would have been more correct if the last clause had been omitted; and the following from F. A. Paley's *Manual of Gothic Moldings* might well have found a place among the illustrative quotations: "It is generally a mark of early Perpendicular work when the casement is deep and narrow, of late when wide and shallow, and of debased when it is so stretched as to become almost or quite a flat surface, sunken but little below the chamfer plane."

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* Members will have seen from the lists of "Additions to the Library" which appear from time to time that through the generosity of Mr. B. Ingelow [*F.*] the Institute has received regularly from the commencement a copy of each part of the Dictionary as soon as published.

But in spite of such omissions as these, which are perhaps so unimportant as to be hardly worth mentioning, one feels that the more one consults the pages of this great work the more one can endorse the words of Dr. J. A. H. Murray, who, in his Romanes lecture on "The Evolution of English Lexicography," given before the University of Oxford in 1900, said: "The structure now reared will have to be added to, continued, and extended with time; but it will remain, it is believed, the great body of fact on which all future work will be built. It is never possible to forecast the needs and notions of those who shall come after us; but with our present knowledge it is not easy to conceive what new feature can now be added to English lexicography. At any rate, it can be maintained that in the Oxford Dictionary, permeated as it is through and through with the scientific method of the century, lexicography has for the present reached its supreme development."

Erdington. BENJAMIN WALKER.

WILLIAM EDEN NESFIELD.

WILLIAM EDEN NESFIELD, architect, eldest son of William Andrews Nesfield, one of the earliest members of the Society of Painters in Water-colours, was born at Bath on the 2nd April 1835.

His father, who was the son of the Rev. William Nesfield, rector of Brancepath and Chester-le-Street, Durham, and travelling tutor to Mr. Lambton, afterwards Earl of Durham, was educated at Winchester and Trinity College, Cambridge. He began his career in the Army, which he entered as a cadet at Woolwich in 1809. Being ordered to the Peninsula with the 95th Regiment (now the Rifle Brigade), he took part with Wellington's army in the fighting in the north of Spain until the capture of St. Jean de Luz in 1813. At the conclusion of the Peninsular War he was stationed in Canada, where he acted as aide-de-camp to Sir Gordon Drummond, and was engaged at the siege of Fort Erie and the defence of Chippeway. Retiring from the Army in 1815 on half-pay, Lieutenant Nesfield resumed the practice of painting, and was elected an Associate-Exhibitor of the Society of Painters in Water Colours in 1823, with Essex, Finch, Gastineau, S. Jackson, and others, and the next year he was elected a member of the Society, and was thenceforth one of its most constant contributors, his early subjects being chiefly Italian or Swiss landscapes. Later in life Mr. Nesfield turned his attention to landscape gardening, and laid out the grounds of a number of noblemen's seats in different parts of the country. He designed the Horticultural Gardens at South Kensington, and remodelled portions of Kew Gardens, St. James's Park, and Regent's Park. He died on the 2nd March 1881, in his 88th year. There is a drawing of Bamborough Castle by the elder Nesfield in the Ellison Gift Collection at South Kensington. A drawing of the Falls of the Tummel by him was sold by Messrs. Christie & Manson at the sale of Mr. Leaf's pictures in 1875 for 310 guineas, and again at the sale of the Leith Collection, 11th May 1891, for 150 guineas, when another drawing of the Ture of Killarney, from the Threlfall Collection, realised 140 guineas.

Ruskin, in *Modern Painters*, speaks in the highest terms of the elder Nesfield's work, and in the chapter On Water as painted by the Moderns (i. p. 349) declares that "Nesfield has given us every character of the radiant cataract"; and speaking of Ruysdael (*Modern Painters*, i. 344) says: "Probably you will not be much disposed to think of any mortal work at the time; but when you look back to what you have seen, and are inclined to compare it with art, you will remember, or you ought to remember, Nesfield. He has shown extraordinary feeling, both for the colour and the spirituality of a great waterfall; exquisitely delicate in his management of the changeful veil of spray or mist, just in his curves and contours, and rich in colour. If he would remember that in all such scenes there is much gloom as well as much splendour, and relieve the lustre of his attractive passages of colour with more definite and prevalent greys, and give a little more substance to parts of his picture unaffected by spray, his work would be very nearly perfect. His seas are also most instructive, a little confused in chiaroscuro, but refined in form and admirable in colour."

William Eden Nesfield was educated at Eton, and entered the College in 1847, when in his twelfth year, in the Lower School, third form. He is described in Stapylton's List of Eton College as "an architect; author of a book on Italian architecture" (such is fame!); "eldest son of the eminent landscape gardener." Nesfield's two brothers, Arthur Markham and David William, were also educated at Eton College, where they entered in 1856 and 1859 respectively. Arthur

Markham Nesfield, who was a pupil of his father, superintended the laying out of the Long Walk and garden in Regent's Park designed by his father, and designed and superintended the laying out of Ramsgate Cemetery, and Fetcham Park, Leatherhead. He was thrown from his horse and killed in 1873.

William Eden Nesfield was the lowest boy in the school at his entrance. He remained at Eton four years, and was then sent to a tutor at Berne in Switzerland. When about sixteen he entered the office of Mr. William Burn, of Stratton Street; but finding Mr. Burn's practice uncongenial to his taste, he went into the office of his uncle, Anthony Salvin, Sen., in Argyll Street. Nesfield is said to have entered the Royal Academy in the Architectural School, and to have gained the Academy Travelling Studentship, but this is denied. On attaining his majority he inherited a legacy of £300, left him when a child by his godfather, Sir William Eden, and with this money he travelled for some time in France and Italy, and visited Athens, Constantinople, Mount Athos, and Salonica in company with James S. Donaldson, the youngest son of Professor Donaldson, during the years 1857–58. During his residence in Rome he sat for his portrait to Edouard Brandon, a distinguished French artist, who was then engaged on the frescoes in the Oratory of St. Brigitte. This portrait is now in the National Portrait Gallery (No. 1193, Room XVII.), to which it was presented by the present writer, who received it from Nesfield's widow as a memento of her husband, who was his travelling companion in Italy.

Soon after his return to England, in 1858, Nesfield commenced practice in Bedford Row, and set to work on his book, *Specimens of Mediæval Architecture, chiefly selected from Examples of the Twelfth and Thirteenth Centuries*, which was published in parts, and was completed in March 1862. To this work his friend Albert Moore contributed a drawing for the lower portion of the title-page, the rest of the design being drawn by Nesfield himself.

Nesfield was elected an Associate of the R.I.B.A. in 1861, a year after his friend and partner, Mr. Norman Shaw, who was elected in 1860, and retired from the Institute at the same time as Mr. Shaw in 1867.

One of Nesfield's earliest works was a new wing to Coombe Abbey, near Coventry, for the Earl of Craven, commenced in 1861, of which he exhibited a drawing in the Royal Academy Exhibition, 1862, which attracted much attention. In after years he regretted that he had destroyed an interesting eighteenth-century building to make room for this addition. The greater part of the lower portion is Early Norman work; the east wing, bridge over the moat, and offices are new. The additions are partly Early English and partly fifteenth century, and are built of native red and white sandstone and English oak. The estimated cost of the work was £58,000, but this is believed to have been exceeded.

Another large work was Cloverley Hall, Whitchurch, Shropshire, for Mr. J. Pemberton Heywood (1862–70), late sixteenth century, which cost £60,000, exclusive of decoration. There is a drawing of the garden front by Nesfield in Eastlake's *History of the Gothic Revival* (p. 339). The peculiarity of this design is that although founded on a French model it is distinctly English in character, and could not be mistaken for anything but what it is—an English gentleman's country house.

> Cloverley Hall, says Mr. Eastlake (*Hist. Gothic Revival*, p. 340), is erected on a wooded slope overlooking a lake in one of the most picturesque parts of Shropshire. The nature of the site made it essentially a hill-side house, and thus involved an uneven distribution of floor levels in its internal arrangement. Under ordinary circumstances this condition of things naturally results in an irregularity of elevation more compatible with artistic effect than domestic convenience; but by the ingenious planning of the staircases and a judicious arrangement of the rooms *en suite* this difficulty has been overcome and the peculiarity of the site is scarcely noticeable. The main entrance to the house is from a courtyard on the upper level: it consists of a spacious vestibule panelled throughout in oak. Thence access is obtained under the music gallery to the great hall, which is about 55 feet long and 28 feet high. The general plan of the hall, with its ample fireplace and large bay window, is not unlike that adopted in the old manor house Ockwells, in Berkshire. . . . Externally the house possesses, in addition to the general picturesqueness of its composition, many distinctive characteristics of construction and design. The bricks of which the main masses of the walls are built were manufactured expressly for the building on the estate, and are far thinner than is usual. They are laid with a thick mortar joint resembling the style of work in old houses of Henry VIII. The parapets (about 3 feet high) are of wood covered with lead, which is beaten outwards at intervals in the form of large rose-shaped ornaments quaintly intersecting each other. [These were called by Nesfield "pies;" they may be seen also on the parapet in front of the bank at Saffron Walden, Essex.] Above this parapet on the main front rise lofty dormers, bearing in their gables sculptured representations of the seasons, carved by Forsyth from designs by Albert Moore. The effect of these figures, which are about two-thirds life size, and executed in very low relief, is very striking.

In 1862 Nesfield designed and carried out a dairy farm, cottages, and shops at the entrance to Sefton Park, Liverpool, for the Earl of Sefton. The dairy is a handsome work, with mosaic panels on the walls and a fine fountain. The Crown Princess of Prussia, afterwards the Empress Frederick, was so pleased with the dairy that she commissioned a replica of it for her palace at Potsdam, which was carried out in the following year.

The lodge at the end of the Long Walk, Regent's Park, for Mr. Cowper-Temple, afterwards Lord Mount Temple, First Commissioner of Works and Buildings (1860–66), erected 1864, is a good specimen of Nesfield's skill in design, and was a great favourite with its author. It has been sadly mutilated by successive First Commissioners, the external woodwork having been painted.

In 1860–61 Nesfield erected at Shipley Hall, near Derby, for Mr. A. N. Mundy, an ornamental farm and dairy; several lodges and cottages are included in the design. The ceiling of the dairy was decorated by Albert Moore.

Kinmel Park, Abergele, North Wales, for Mr. H. R. Hughes, begun in 1865, is an enormous building in the Classic style, and is illustrated in the *Architect*, July 17th 1891, and the lodge in the *Architectural Review*, vol. i. p. 241, from photographs.

> Kinmel (says Mr. Brydon) is quite without a rival for the artistic power and knowledge it displays, for the dignity of its treatment, and the refinement of its detail. Like all he did, it is the work of a true artist, and is carried out with a thoroughness and vigour which were all his own.

Plas Dinam, Llandinam, Montgomeryshire, erected in 1872 for Captain Crewe Read, R.N., illustrated in the *Architectural Review* (vol. iv. pp. 62, 63), is one of Nesfield's most successful country houses, and was thus described by Mr. Stuart Rendel, now Lord Rendel:—

> Plas Dinam was designed and built for Captain Crewe Read, R.N., and he was so fortunate as to place himself wholly in Mr. Nesfield's hands from choice of site down to china and furniture. Captain Read told me that in regard to outlay his confidence was singularly justified, and that the house was built within the architect's estimate, and the contract carried through without extras.
>
> The house is singularly attractive in elevation from all points of view, and not less novel in treatment than suitable to its position and the surrounding scenery. There is fine artistic feeling in every detail of it inside and out, yet with great reserve, simplicity, and breadth; but it is perhaps the plan and disposition of the accommodation which command most attention and praise. Family, guests, and servants during my residence in it were always unanimous in the opinion that it was, for its size and character, faultless in arrangement and comfort. I venture to affirm that Plas Dinam will prove that an architect of these days harmoniously and thoroughly displayed the union of three qualities hardly ever found together—marked originality in art, plain common sense in all practical matters, and scrupulous care and exactitude in business and money questions.
>
> I confess that I think that in him the country lost the ablest of the valuable band of authors of the revived school of domestic architecture.

> Plas Dinam (says Mr. Brydon in an article in the *Architectural Review*, vol. iv. p. 62) is a moderate-sized house in Mr. Nesfield's most characteristic manner. Built of stone, with the upper portion of the walls covered with grey-green slates, tall red-brick chimneys, half-timbered gables, and many mullioned windows, we have here all the features he used with such artistic skill and felicity, but which, though familiar, never seem to lose their attractiveness in such capable hands.
>
> In plan the house bears a striking resemblance to Loughton Hall (illustrated, vol. i. p. 293), or, rather, it should be said Loughton Hall resembles Plas Dinam, for the latter was built in 1872, and therefore some six years previous to the former. The entrance, the great hall, the public rooms, and the offices have exactly the same relation to each other in both houses, so much so indeed that at first sight they appear to be the same or, at all events, studies for the same house; but when the details come to be looked into, there are many and noticeable differences; for example, the somewhat awkward disposition of the steps in the entrance hall and the principal staircase at Loughton is a departure, and hardly for the better, from the superior arrangement at Plas Dinam. The owner's private room also in the latter is more *en suite* with the great hall and the public rooms, and has thus a much better approach. Still after making every allowance, it is a curious instance of an architect repeating what is substantially the same plan on two quite separate sites, and with entirely different materials. The outward and visible expression of this sameness in plan, however, is altogether another matter. Loughton is a brick house, Plas Dinam essentially a stone one; moreover, the two are entirely different in style and architectural treatment—as great a contrast in this respect as their plans are in correspondence. Plas Dinam is architecturally of much the same type as Lea Wood (illustrated, vol. i. p. 295), but larger and more important, and preceded the latter by about two years. The same mediæval treatment prevails throughout; the external treatment of such features as the entrance gable, the bay windows, and the chimney stacks is very similar. In this respect it is an interesting study of the working of the architect's mind, taken into conjunction with the later houses just mentioned, and the results as affected by the nature of the requirements, the sites, and the materials of which they are built. In fact, Plas Dinam seems to have given the letter of its plan to Loughton Hall, and the spirit of its elevations to Lea Wood. With regard to materials, a noticeable incident is the employment of grey-green slates for the roofs and the upper portions of the walls, instead of the usual red weather tiling. The warm colour of the stone, the greenish-grey of the slates, and the red of the chimney-stacks, give quite a different scheme of colour from most of Mr. Nesfield's houses.

In 1887 Nesfield married Mary Annetta Gwilt, the eldest daughter of John Sebastian Gwilt and granddaughter of Joseph Gwilt, to whom he bequeathed the whole of his property, amounting to some £25,000.

Towards the close of his life Nesfield relinquished business and retired to Brighton, where he died on the 25th March 1888, within a few days of completing his fifty-third year.

The *Athenæum*, in an obituary notice, credits Nesfield with the authorship of several papers on architecture and archæology, but this does not appear to have been the case. He had no taste for literature. and the only contribution known to have been made by him to the Press is a memoir of his uncle, Anthony Salvin, in the *Building News*, 17th December 1888, signed with his initials.

Nesfield had a great dislike to publicity, and avoided what he called advertising, or calling attention to himself in any way, and would never permit illustrations of his works in the professional journals. He had besides an imperfect sympathy with conventional society, but was a most agreeable companion, and numbered some of the most eminent men in literature and art among his friends; the gatherings at his rooms at Argyll Street, and his excursions with the Fabs were memorable events.

Among his strongest characteristics were his singular uprightness and a sturdy independence in his bearing towards his clients. He could never be persuaded that he was the servant of an employer, and treated him in something of the same manner that Michelangelo assumed to Pope Julius—as a friend and patron and nothing more. He was quick to uphold the honour of his profession, "to keep his shield bright," as he expressed it; and for this, if for nothing more, those who survive him should hold his memory in grateful remembrance.

LIST OF SOME OF THE WORKS OF THE LATE WILLIAM EDEN NESFIELD.*

1860. Cross at West Derby.
1861. New Wing to Coombe Abbey, Warwickshire: for the Earl of Craven.
,, Holbrook Lodge, Ipswich: for John Berners, Esq., of Woolverstone Park.
,, Entrance Lodge, Lodge Gates, at Bradfield Hall, Bury St. Edmunds: for Arthur J. Young, Esq.
,, Boat House, Pavilion, Terrace Seats, Clumber: for the Duke of Newcastle.
1862. Dairy Farm Cottages and Shops at Liverpool; entrance Croxteth Park, Liverpool: for Lord Sefton.
,, Sundial, Pavement, Flower Basin: for John Malcolm, Esq., Callore, Mor, N.B.
,, Farm House, Lodge, Labourers' Cottages, and new Porch to Hall: for A. Mundy, Esq., Shipley Hall, near Derby.
,, Two Lodges, Kirklington, Oxon.: for Sir H. Dashwood.
,, Pavilion and Iron Gates, Swillington: Sir John Lowther.
1863. Welcombe Mansion, near Stratford-on-Avon: for Mark Phillips, Esq., of Snitterfield Hall, Warwickshire.
,, Sproughton Manor: Lieut.-Colonel Phillips.
1863 & 1875. Laundry Buildings, Summer House and Lodge: for Mme. Van de Weyer.
1863. Terrace, Walls, Steps, Fountain Basins: for the Royal Horticultural Society's Gardens, South Kensington.
,, Dairy at Potsdam, similar to that at Croxteth Park. For the Empress Frederick.
,, Bank at Saffron Walden, Essex.
1864. New Lodge, Regent's Park.
,, Conservatories and Ferneries: Viscountess Holmsdale, Linton Park, Kent.
1865. Kinmel Park, Abergele, N.W.: H. R. Hughes, Esq.
,, Monument for Sir John Shelley of Avington.
,, Cloverley Hall, Shropshire: J. Pemberton Heywood, Esq.
,, Weston Lodge, Barthomley Lodge, Farm House, Cottages, Station-master's House: for Lord Crewe, Crewe Hall, Staffordshire.
1866. Lodge, Kew Gardens.
1869. Bettws Church, New Town, North Wales.
1870. Clock Tower, Hampton-in-Arden, Cottages and Lodges.
1871. Alterations, 23, Chesham Place: Sir Frederick Peel.
,, Bank Hall, Chapel-en-le-Frith.
1871. Romsey Schools, Romsey, Hants.
1872. New Reading Room and Library for Colliers at New Battle Abbey: Marchioness of Lothian.
1872 to 1878. Entrance Lodge, Water Works, Fountain, Orangery, Library, Broadlands, Hants: Lord Mount-Temple.
1872. Rose and Crown Inn, Saffron Walden, Essex.
,, Plas Dinam, Llandinam, Montgomeryshire: Capt. Crewe Read.
,, Turnpike and Double Cottages: Marquess of Lothian.
1873. Bodrhyddan Rhyl, North Wales: extensive alterations for Captain Conwy Rowley Conwy.
,, Ingestre Monument, Ingestre Church, to the 18th Earl of Shrewsbury.
,, Tomb in Willesden Church to Mrs. H. Vallance.
1874. Loch Lincart Lodge, N.B.: Lady Ashburton.
,, Melchet Court, Romsey, Hants: Lady Ashburton.
,, Maesmaur Hall Farm House, North Wales.
,, Farnham Royal Church, Slough.
,, New Organ Chamber and alterations to Vestry, Holy Trinity Church, Paddington.
,, Lea Wood, near Matlock, Derby: W. Walker, Esq.
,, Corra Church (restoration), Whitchurch, Salop: John Pemberton Heywood, Esq.
,, Shops and Cottages, Radwinter, Essex.
1875. Plas Ucha Farm, on the Mostyn Estate, North Wales.
,, Newport Schools, Essex.
,, Houghton Church restoration, Norfolk: Henry Lee Warner.
,, Keplin Hall: extensive alterations, new Stables, Northallerton, Yorks: Admiral Carpenter.
1876. SS. Mary and Bartholomew, restoration, Hampton-in-Arden.
,, Cliff House, Babbicombe, Devon: Lord Mount-Temple.
,, Llandyrnog Church (restoration), Denbigh, North Wales: for Rector and Committee; Font in 1879 for Captain Mesham.
,, Bolton Church, Bolton-on-Swale, restoration; Organ, Reredos, Stained Glass Window.
,, Scorton Schools, Cattereck-on-Swale, Yorkshire: Christopher Craddock, Esq.
,, Memorial Chapel, Loughton, Essex; Loughton Parish Church (restoration), Essex; Loughton Hall, Essex: R. J. Whittaker Maitland, Esq.
,, Wygfair Hall, Denbigh, North Wales.
,, Gloddaeth, near Llandudno, North Wales: Lady Augusta Mostyn.
,, St. Margaret's Church, Wicken, Bishop Stortford, New Aisle, Vestry, Organ.
,, Ray Meadow Farm, Toddington: Lord Sudeley.
,, Sculpture at Toddington: Lord Sudeley.
,, Hampton-in-Arden mansion, extensive alterations, new Staircase and Garden Entrance, near Birmingham: Sir F. Peel.
1877. Double Cottages: Lord Mount-Temple.
,, Gwernyfed Park, Breconshire: T. Wood, Esq.
,, Cloverley Hall, Shropshire: John Pemberton Heywood (? 1865).
,, Corra Church Tower: in memory of John Pemberton Heywood, erected by his widow.
,, House at Greenock: for John Stewart, Esq.
Finished in 1877. Greynog Hall, Montgomery: Lord Sudeley.
,, Labourers' Cottages at Toddington: Lord Sudeley.
,, Falkbourne Hall, Witham, Essex.
1878. Alterations and additions, 7, Buckingham Palace Gate: Lord Sudeley.
,, Reredos, Walsingham Church, Norfolk.
,, Alterations and additions, 23, Grosvenor Square: A. P. Heywood Lonsdale, Esq.

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* This list was compiled from account-books by Mrs. Nesfield after the death of her husband. Absolute accuracy is not claimed for it, and the dates in some instances may be earlier or later.

1879. House at Westcombe Park, Greenwich: F. Garrard, Esq.
,, Memorial Cross at Manchester: T. Armstrong, Esq.
,, Hutton Bonville Hall, Northallerton, Yorks: T. R. W. Hilyard, Esq.
1880. Memorial Brass, Eton College Chapel, Durnford.
1881. House at West Auchmade, Greenock: T. R. Lamont, Esq.

There are many works of alteration, additions, &c.
5, Aubrey Road, Notting Hill.
Dr. Whistler's House.
House for H. Vallance at Farnham Royal.
Monuments to Lady Peel, Lady Geary, Earl Craven's son, and others.
Also gas-works at Gwernyfed, Kinmel, and other places.

JOHN HEBB.

OBSTRUCTION TO LIGHT [p. 369].

From Mr. H. PHILLIPS FLETCHER [*F.*]—

I note in the current number of the R.I.B.A. JOURNAL a letter from Mr. Molesworth, in which the shaft of criticism appears to have taken so true a flight that he must needs descend to something akin to personalities.

One would think, if the author possessed practical experience in matters relating to easements of light and air, that he would hardly find the first paragraph of the review too involved for him to comprehend.

With regard to the Pole Star, it revolves round the Pole at a uniform distance of 1° 16′, so that the total alteration in altitude is never more than 2° 32′. A distinguished naval commander (whose letter I inclose) states in his letter that "the variation of the compass is frequently found by means of the Pole Star."

You will notice that the above-mentioned naval officer also writes in the same letter, "With regard to great-circle sailing it seems to me that spherical trigonometry is the simplest way."

The above passages seem to me to entirely dispose of Mr. Molesworth's "review of reviews"; and as he invokes naval opinion I have most willingly conformed to his procedure with regard to this portion of his book.

In the review in question it was also pointed out that—

(1) The deviation of the compass was incorrectly stated by over 4°.

(2) The example worked out referred to the latitude, approximately, of Turin and Sebastopol.

(3) No allowance was made by the author for the varying values of the angle of incidence of the sun's rays.

(4) That it was a necessary corollary of the author's work that if no sky is visible there will either be no light in a room, or that if there be any light it will be of no value.

(5) That the distance of the obstructive erection is not taken into account.

(6) The author does not deal with the best light one can obtain—namely, that from the north.

(7) That the part of the book relating to diffused light was published thirty-eight years ago by Professor Kerr.

And yet Mr. Molesworth objects that the review is not criticism!

MINUTES. XIV.

At the Fourteenth General Meeting of the Session 1902–1903, held Monday, 18th May 1903, at 8 p.m., the President, Mr. Aston Webb, A.R.A., F.S.A., in the Chair, with 19 Fellows (including 9 members of the Council), 26 Associates (including 1 member of the Council), 2 Hon. Associates, and several visitors, the Minutes of the Meeting held Monday, 4th May [p. 372], were taken as read and signed as correct.

Mr. David Morgan [*F.*], President of the Cardiff, South Wales, and Monmouthshire Society, attending for the first time since his election, was formally admitted by the President, and signed the Register.

On the motion of the President, a cordial vote of thanks was passed to Mr. E. J. May for his kindness in lending the Nesfield drawings for exhibition at the President's "At Home," and for the trouble he had taken in arranging them for members' inspection.

The following candidates for membership, found by the Council to be eligible and qualified according to the Charter and By-laws, were recommended for election, namely:—As FELLOWS, William Henry Atkin Berry [*A.* 1879]; Bernard William Hurt Brameld (Manchester); Walter James Burrows; Edward Guy Dawber [*A.* 1889]; Horace Field; James William Fisher (Wellingborough); John Gibbons (Manchester); Henry Jones Lanchester [*A.* 1874]; Hallam Carter Pegg [*A.* 1896]; Reginald Pope (Folkestone); Harry Redfern; Henry Whiteman Rising; Arthur Heron Ryan-Tenison [*A.* 1894]; Francis William Tasker [*A.* 1874]; William Henry White [*A.* 1887]. As ASSOCIATES, Cedric Heise Ballantyne (*Qualified* in Melbourne 1902) (Melbourne, Victoria); Edward Albert Jollye (*Qualified* 1888) (Wolverhampton); Arnott Woodroofe (*Probationer* 1896, *Student* 1898, *Qualified* in Canada 1902) (Vancouver, B.C.). As HONORARY ASSOCIATES, Alfred East, A.R.A.; Thomas Hayton Mawson (Windermere); Solomon Joseph Solomon, A.R.A. As HON. CORRESPONDING MEMBERS, Jean Louis Pascal, Member of the Institute of France, Paris; Heino Schmieden, Königl. Baurath, Ordentliches-Mitglied der Königl. Akademie der Bauwesens, Mitglied der Königl. Akademie der Künste, Berlin.

A Paper by Sir Martin Conway on THE BEGINNINGS OF THE EGYPTIAN STYLE OF ARCHITECTURE having been read by the author and illustrated by lantern slides, a discussion ensued, and a vote of thanks was passed to Sir Martin by acclamation.

The proceedings then closed, and the Meeting separated at 10 p.m.

MODERN FURNITURE, MOVABLE AND FIXED.

By J. Alfred Gotch [*F.*], F.S.A.

Lecture delivered at Carpenters' Hall, 5th March 1903.

IT may be doubted whether, fifteen or twenty years ago, an audience of any kind could have been brought together to listen to a lecture on the subject of furniture; and that this should no longer be the case points to the great awakening of interest in matters relating to Art which marks the present day. The effect of this awakening is two-fold. Exhortations from more or less eminent critics, together with improved design, have stirred the perceptions of the public; the keener appreciation of the public has reacted on the designers, and encouraged them by making them feel that their efforts meet with more intelligent criticism than in former days. But we are not free to-day, any more than our ancestors were in the past, or (we may safely say) our descendants will be in the future, from that shallow species of intelligence which approves of certain things because they are fashionable, and not because of their inherent good qualities—which adopts particular forms because they are the badge, or the shibboleth of a certain set or clique, whom it supposes to be imbued with an unusual amount of artistic perception. We know well that "the poor we have always with us," whether their poverty be of worldly or of mental possessions. But setting this class of persons aside, it is clear on every hand that the appreciation of beauty and fitness is more widely spread than it was a quarter of a century ago. To take one instance alone, whereas some years ago the interesting designs published in the building papers would be the work of a few well-known men, probably living in London, now hardly a week passes without some agreeable design appearing, of which the author not only lives in the provinces (as they are called), but lives there in comparative obscurity—so much has vernacular design improved in architectural matters.

For a considerable period now there has been a rage for old furniture, and when one reflects on the amount of the handiwork of certain well-known makers which has passed through the market during the last few years, the labours of Hercules sink into insignificance beside those of Chippendale; and Briareus, with his hundred hands, would have been consumed with mortification could he have beheld Sheraton at work—so swiftly and with such profusion must the latter have produced his wares.

But this rather morbid desire to be surrounded with furniture of antique appearance would seem to be about to succumb to an anxiety to possess modern furniture. Those who are in the secrets of the trade can tell best, but modern furniture dealers appear to be doing a thriving business in England, and there has been an enormous demand on the Continent for furniture made from the recipes or prescriptions of the "New Art." Whether the makers of the genuine antique goods have experienced a corresponding depression has not transpired at present.

Something about the "New Art" will have to be said in remarks which have modern furniture as their subject—it would be impossible to avoid it—but there will be no need to enter at much length into either the merits or the demerits of the movement. It exhibits a real desire for novelty, and one of its fundamental principles in the English version is the admirable one of simplicity. But one sometimes is forced to the conclusion that in the endeavour to eschew familiar methods of decoration, and to shun meretricious display, there

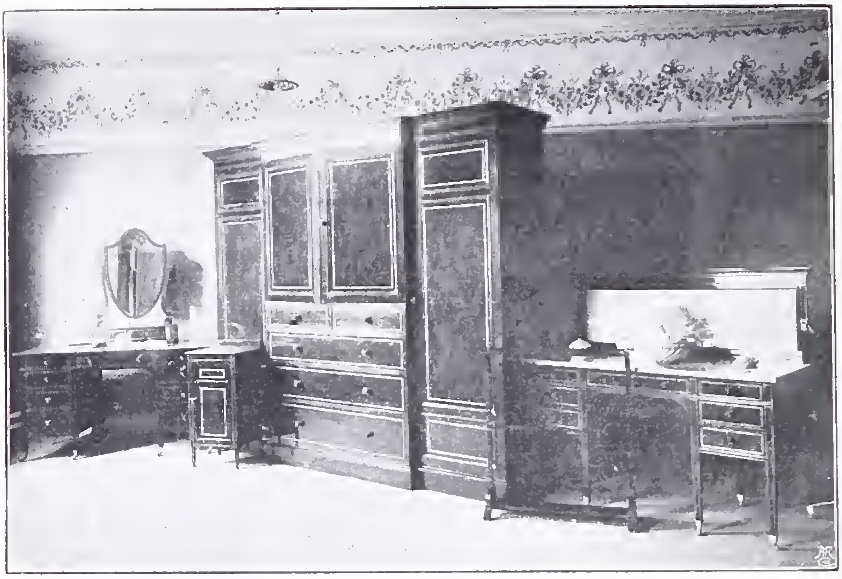

FIG. 1.

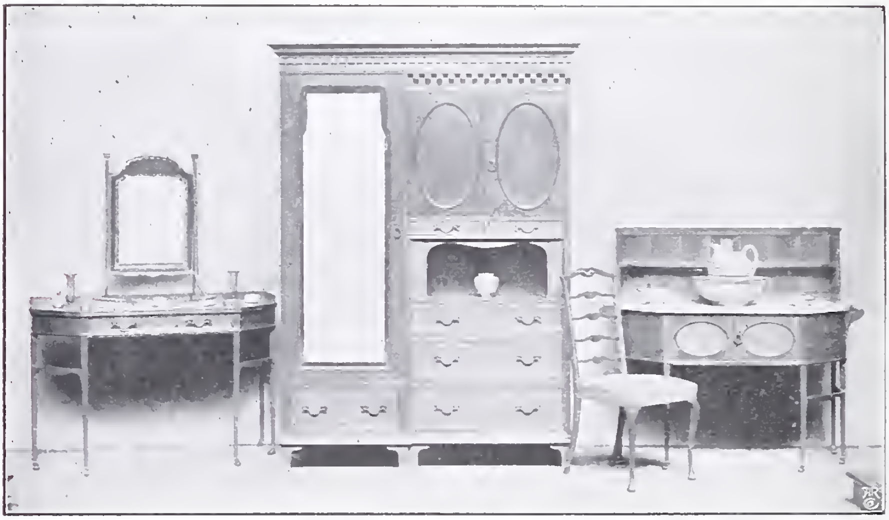

FIG. 2.

BEDROOM SUITES, BY MESSRS. WARINGS.

has been achieved, with much ingenuity, a considerable absence of beauty and interest. It is as though no desirable mean could be found between the fantastic artificial coiffure of the eighteenth century and a bald head, or between a Louis XVI. cabinet and a kitchen dresser. The negation of all the accustomed methods of producing effect is at bottom affectation, and affectation of a rather annoying type, for you are called upon to admire as a supreme effort in design that which strikes you as being entirely free from the qualities which you have been accustomed to associate with design.

Simplicity and directness are admirable, but behind them we want the feeling that they are the result of restraint, not of inexperience; that they are the deliberate choice of a grown man, not the involuntary effort of a child. To make simplicity most effective, it wants a certain admixture of fancy. Some of the work of those who range themselves beneath the banner of the "New Art," one cannot help feeling, suffers from the defect of overdone simplicity, and it engenders much the same kind of distress as the sight of a lady of forty assuming the artless airs and dress of sweet seventeen, or a stout elderly actress playing the part of an *ingénue.*

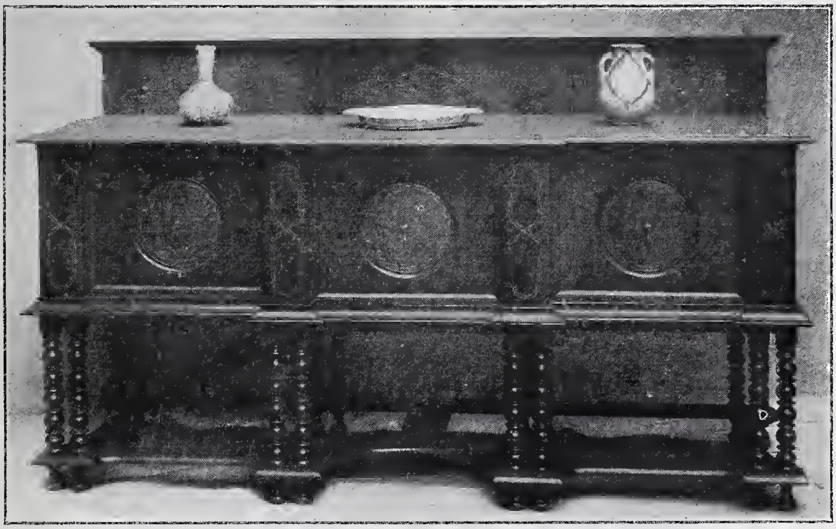

FIG. 3.—A SIDEBOARD, BY MESSRS. WARINGS.

Criticisms of this kind have been made before, and it is not likely that this further addition to them will have much effect—one knows too well how easily the shaft of the Philistine glances off the armour of the Chosen People. But if a stray shaft could penetrate —not to kill, but merely to rouse – the effect would be most wholesome; for behind all the affectation of this particular cult there is a real, genuine desire for improvement in design, and undoubted ability to produce it.

Of course the "New Art" has affected modern furniture, notably on the Continent. The term "New Art" is used here because it has been so widely adopted; but the phrase itself is a little unfortunate, for the whole of history points to a gradual evolution in all things. New styles in the domain of Art have grown out of what went before, and, as a rule, were hardly recognised as new until they were well established; but an art that calls itself "new" is a very ambitious affair, and seems to require something more to justify it than anything that has been seen up to the present.

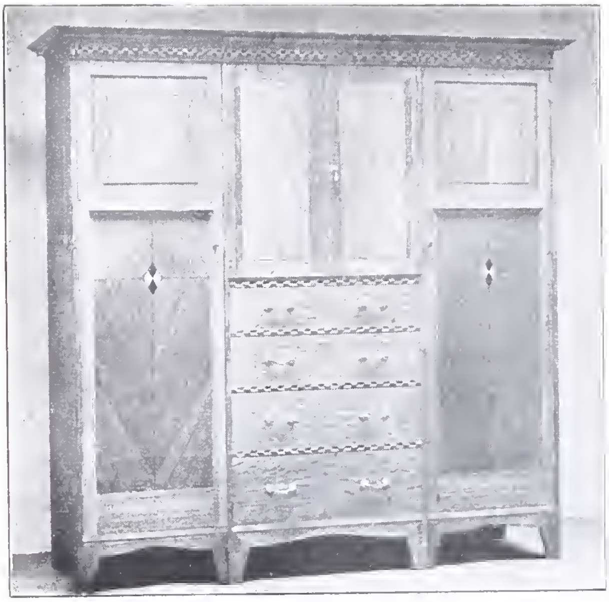

FIG. 4.

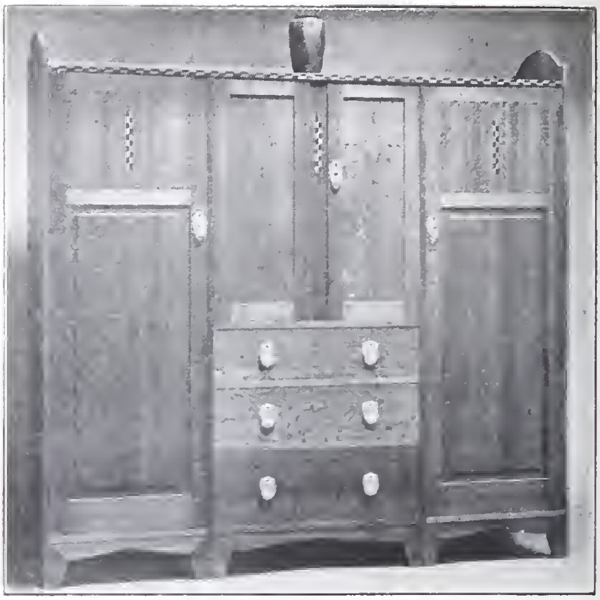

FIG. 5.

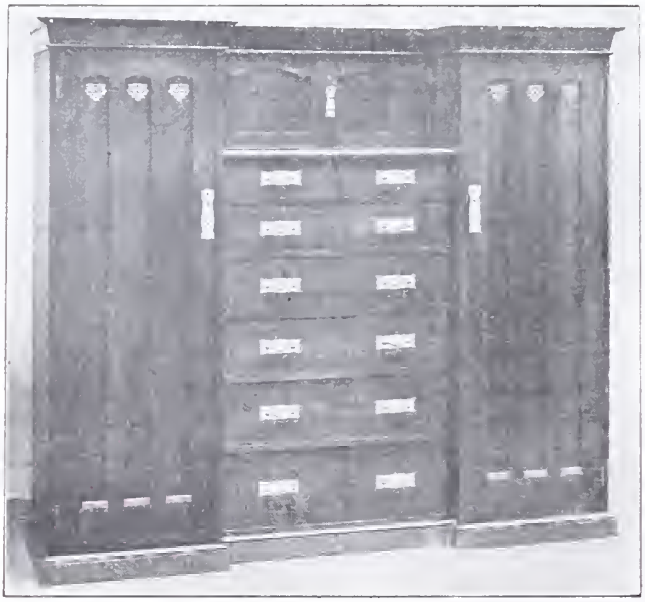

FIG. 6.

WARDROBES, BY MESSRS. HEAL & SONS.

But still the movement which bears this name has affected modern furniture, and in order to judge of its influence it is desirable to consider what principles should guide design in furniture; in other words, what qualities furniture should possess.

The vast majority of people who use furniture are ordinary persons, and the ordinary person will ask to have round him (and, perhaps, though not so certainly, round *her*) things which are convenient and things which are comfortable. Tables should not fall over too easily (unless they happen to be supporting certain modern vases at the time). Chairs should be comfortable, especially if they profess to be easy-chairs: they should not inflict unexpected knocks, bruises, and abrasions of the skin: they should be fairly light in weight, and yet strong in construction. Doors of cupboards and wardrobes should open and shut easily, so also should drawers; trays should slide out and in without raising the suspicion that the door of the wardrobe will have to be taken off its hinges. Other points like these will occur to everyone, but they may be all summed up in the demand for convenience and comfort; and by asking for comfort it is not to be supposed that every chair is to be an easy-chair, but rather that it is to be suitable for its purpose. There used to be folding chairs which were apt to throw the stranger in a most disconcerting way on to the floor unless he sat well back on them: there are soft lounging chairs, very proper for the boudoir or the smoking-room, but quite out of place in a drawing-room, since no one but an athlete can rise from them save through a slow and laborious process—quite unsuitable to the sudden emergencies which sometimes arise in a drawing-room.

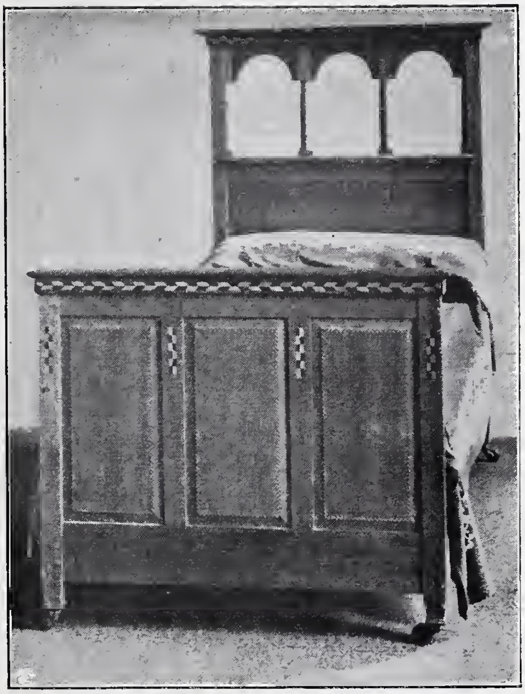
FIG. 7.—A BEDSTEAD, BY MESSRS. HEAL & SONS.

But although most people will be prepared to admit the propriety of establishing convenience and comfort as the basis of furniture design, there will be a wide divergence of opinion as to the best methods of expressing those qualities. We get here into the realm of Taste, about which it is useless to argue. Nevertheless, the pursuit of convenience and comfort in furniture seems to lead to simplicity, cleanness of line, an absence of features likely to retain dust, and constructional propriety; for sins against construction will sooner or later be exposed and punished, involving the annoyance and discomfort of those who use the furniture. To these may be added a certain display of Fancy. The desire to avoid dust and dirt leads to a prevalence of polished surfaces, and this, again, to the use of various kinds of wood susceptible of taking polish. It also points to the avoidance of complicated mouldings and a sparing use of carving. Our ideal piece of furniture, therefore, will

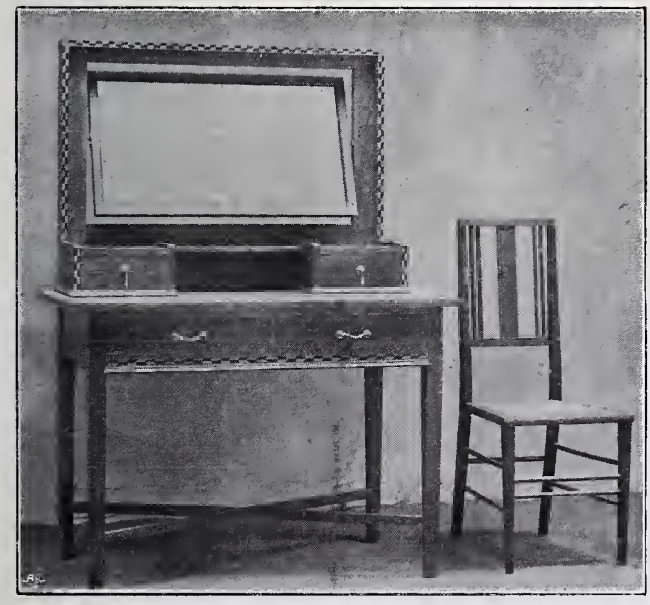
FIG. 8.—DRESSING-TABLE AND CHAIR, BY MESSRS. HEAL & SONS.

be simple in outline and simple in treatment: its form will be graceful, its colour pleasant; and here and there will be a fanciful touch, enough to show, or at any rate to suggest, that the designer had some feeling for design.

Much of the ancient furniture which gives us so much pleasure satisfies these conditions; and, partly because it satisfies them and partly because of its excellent workmanship, it has survived the changes and chances of this transitory world, and has lasted to our own times. But it must not be supposed that all ancient furniture is truly æsthetic in design and construction; there are not a few pieces to be met with which are faulty in both particulars. It would be a mistake to accept all old examples as perfect; nevertheless the bulk of it has undoubtedly survived, like other things in the world, because of its fitness.

Having thus set out certain qualities which ought to distinguish furniture, it will be desirable to look round and see how far modern furniture possesses them, and at the outset the question occurs, By whom is modern furniture designed? Let us exclude from the term "modern furniture" all that immense amount of what is called "factory" stuff, which fills the windows of the ordinary furniture shop and depresses the spirits of the enlightened beholder. As many people buy it, it is to be supposed that they do not dislike it; it may be also fairly supposed that they do not actually like it. They take it because it is there, and because they have not been trained to discriminate in matters of design.

But where is the better class of furniture designed—the kind of furniture which is really worth discussing? Much of it comes from the drawing-offices of firms like Warings and Heal & Sons; and some of it from the pencils of amateurs; and, if it may be said without disrespect, the work of the latter appears rather amateurish beside that of men who are in close touch with the sale of furniture. It is one thing to design furniture, it is another thing to sell it; because the latter process implies having an article which stands the test of experience and of constant wear and tear. But, on the other hand, it is essential that the designer of furniture should have the architectural spirit; that his design should be based upon construction and governed by constructional propriety; that his ornament should be applied with discretion and should harmonise with his lines of construction

In order to illustrate the subject of modern English furniture I approached several eminent firms of furniture makers, and (to avoid misconception in these days of universal advertising) let me say at once that it was I who approached the firms, and not they who approached me. I have no desire to advertise any special firms, but at the same time I must acknowledge with thanks the courtesy of those gentlemen who have enabled me to illustrate the subject upon which I am speaking. There are three houses to whom I am chiefly indebted—Messrs. Gillow, Warings, and Heal & Son, and I found the work of the three houses was distinct in its character, and typical of the "streams of tendency" in furniture design. My object, you will bear in mind, was to ascertain upon what lines modern furniture was designed—furniture, that is to say, which finds a large sale among the general public, not furniture which is specially designed for a particular person or for a select circle. The result was that at one of the firms nearly everything was a reproduction of old examples—beautiful things, but not new in design. The same result was obtained by a visit to a firm in Edinburgh; and the conclusion to be derived is, that a vast amount of the best modern furniture is closely copied, if not actually reproduced, from old examples. At another firm the prevailing idea was to found design on the old examples, but to adapt it to modern needs, making sufficient changes to meet new requirements, but adhering closely to old types and to old methods of obtaining effect. At the third firm the designers had emancipated themselves more thoroughly from the old forms, and while subordinating their ideas to the practical requirements of the various pieces of furniture, they impart a character to their work which proclaims at once that it is modern; the most casual glance shows that it is not ancient. Which kind of work is the most satisfactory is of course a matter of individual taste; but probably everyone would agree that a careful development on the lines of the best old examples is more satisfactory than those bold attempts at originality which found so much favour forty years ago at the time of the Exhibition of 1862. The illustrations of furniture to be seen in the official record of that great Exhibition—illustrations which received the highest commendation in the text—make one wonder whether a standard of good taste can ever be established, and cause one to revert with still firmer faith to the principles already laid down, that in furniture the qualities to be aimed at are convenience and comfort, and that these will be best secured through constructional propriety, cleanness of line, and simplicity.

Anyone interested in modern furniture would, of course, visit the Arts and Crafts Exhibition, and the opinion which most visitors would form of the furniture exhibited there would probably be that, while some of the pieces were admirable, many of them suffered from a too thorough revolt from old methods of treatment. No doubt the impression received would vary according to the visitor's attitude of mind, and whether he was an admirer of a particular cult or of things pleasant to look at and pleasant to use.

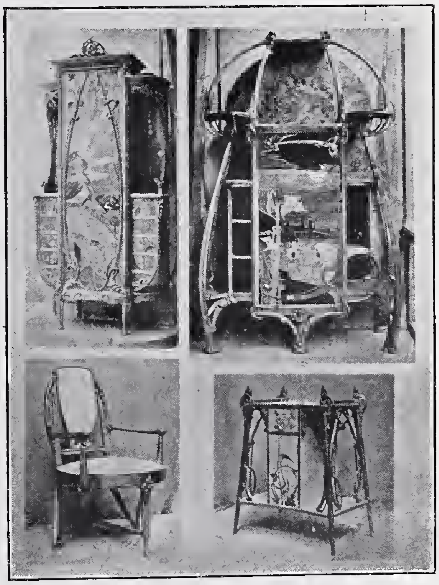

FIG. 9.—FURNITURE OF "L'ART NOUVEAU" EXHIBITED AT THE PARIS EXHIBITION OF 1901.

English furniture has not yet been very greatly affected by the foreign forms of *l'art nouveau*, and it is to be hoped that it will continue to escape their influence. At the same time there is much to admire in many of the pieces included in the Donaldson Collection at the South Kensington Museum. Much controversy has taken place over this munificent gift; but the donor, who had exceptional opportunities of forming a judgment, found that there was an enormous demand on the Continent for furniture designed according to the canons of *l'art nouveau*. The new departure could not be ignored, especially from the commercial point of view, and he gave the English mechanic the chance of studying at home examples of what was being turned out on a vast scale abroad. The furniture selected under the Donaldson gift by the authorities from that which was shown in the last Paris Exhibition comprised the most reasonable specimens from among what must to English taste appear, in the bulk, fantastic and bizarre. But these particular specimens show originality of treatment and a thorough knowledge of the subject on the part of the craftsman; and, although one can hardly desire that they should be closely copied, they ought to afford valuable suggestions to a vigorous designer and stir his imagination.

A modern development in furniture is what is known as a "fitment," which means that the principal articles of furniture in a bedroom are permanently fitted into their places and made part of the decorative treatment of the room. The advantage of the fitment is that space is economised by a process which at the same time decorates the room and gives it a more or less architectural character. The idea is a good one for small rooms, but architects will probably be of opinion that the design of the furniture dealers falls short of what they could themselves supply. It should be borne in mind, however, that the niceties of furniture design are not mastered without some training.

And now, after seeing what the great furniture houses and the exhibitions can show us, what conclusions do we arrive at in regard to modern English furniture? It may not unjustly be said that, apart from the cheap stuff which fills so many shops, there is a genuine tendency to advance, sometimes along the lines which have already been traced out by our predecessors, sometimes along fresher tracks. Some of the more adventurous spirits, who

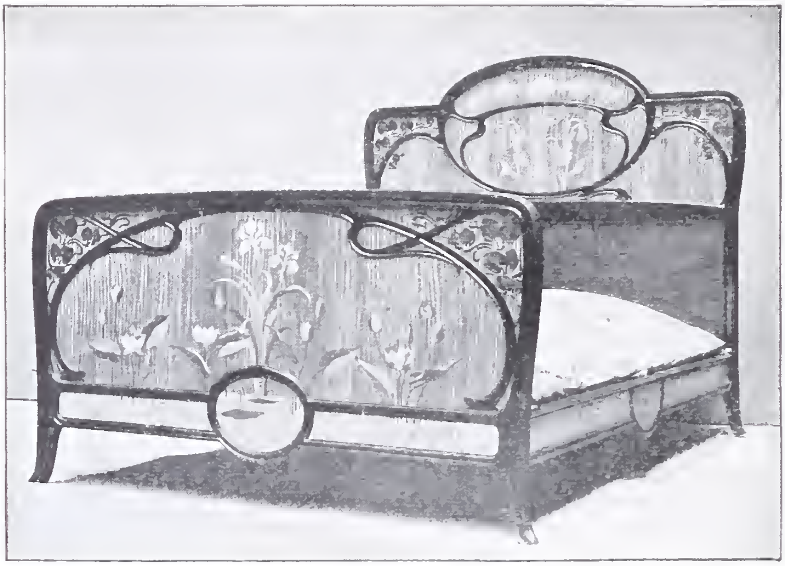

FIG. 10.—BEDSTEAD.

FROM THE DONALDSON COLLECTION.

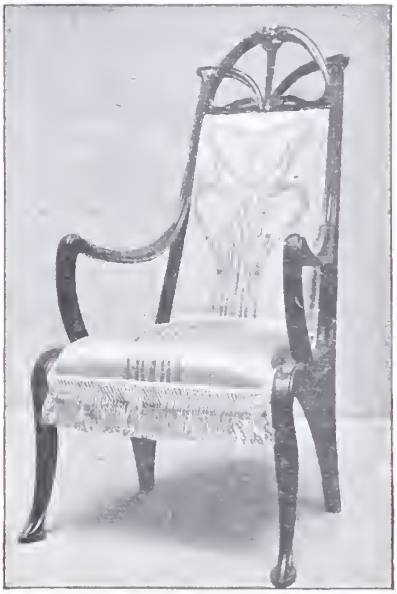

FIG. 11.—ARM-CHAIR

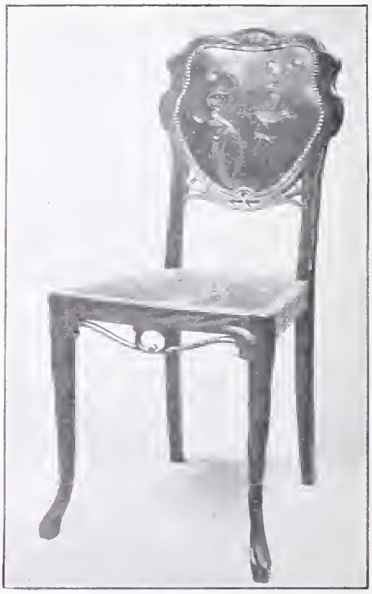

FIG. 12.—CHAIR.

FROM THE DONALDSON COLLECTION.

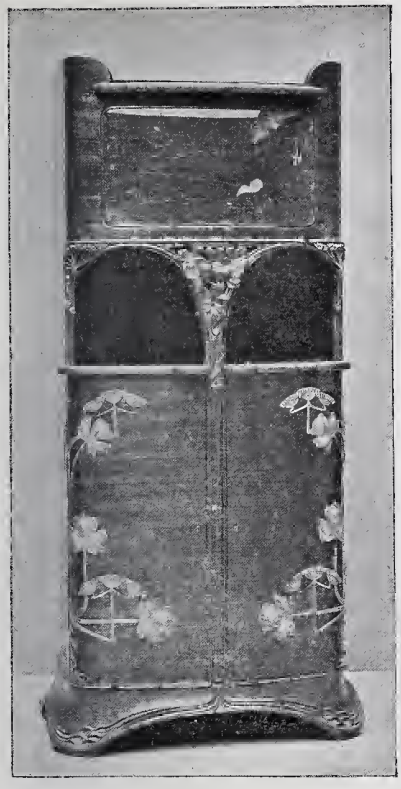

FIG. 13.—CABINET.

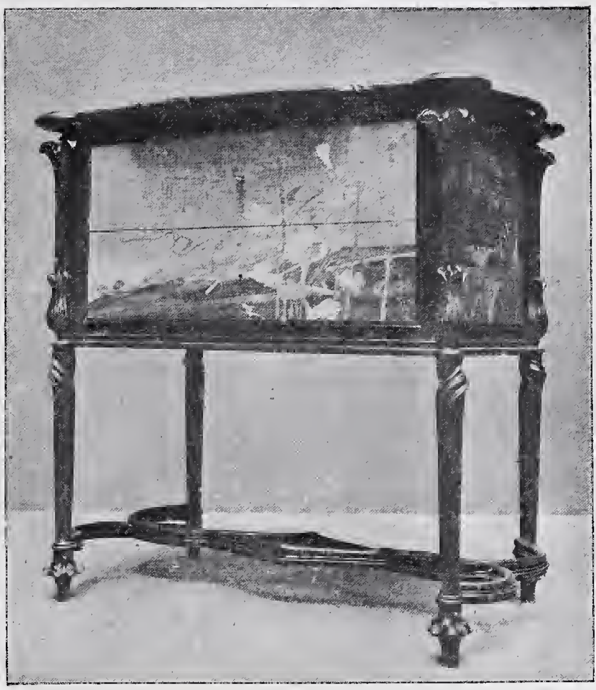

FIG. 14.—CABINET.

FROM THE DONALDSON COLLECTION.

depart from the ancient ways, do not escape the pitfalls which experience, it is to be presumed, will eventually teach them to avoid. But in any case we need not be ashamed of the part which English craftsmen are taking in the struggle; and, to conclude in the same

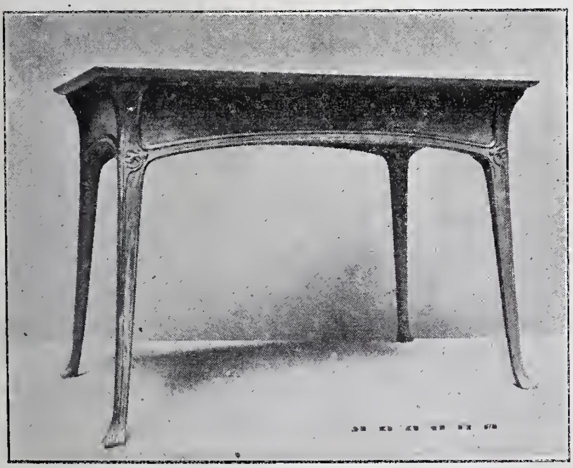

FIG. 15.—TABLE.

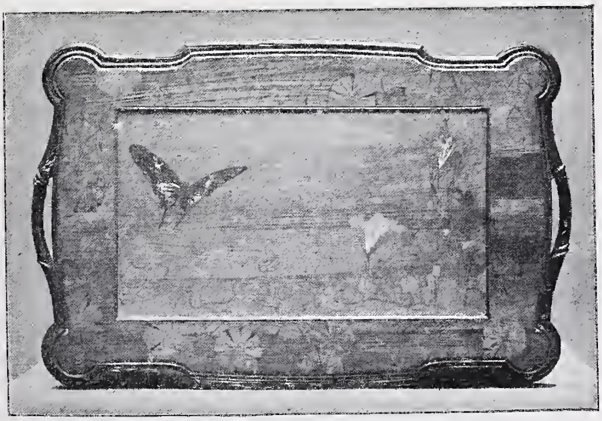

FIG. 16.—TRAY.

FROM THE DONALDSON COLLECTION.

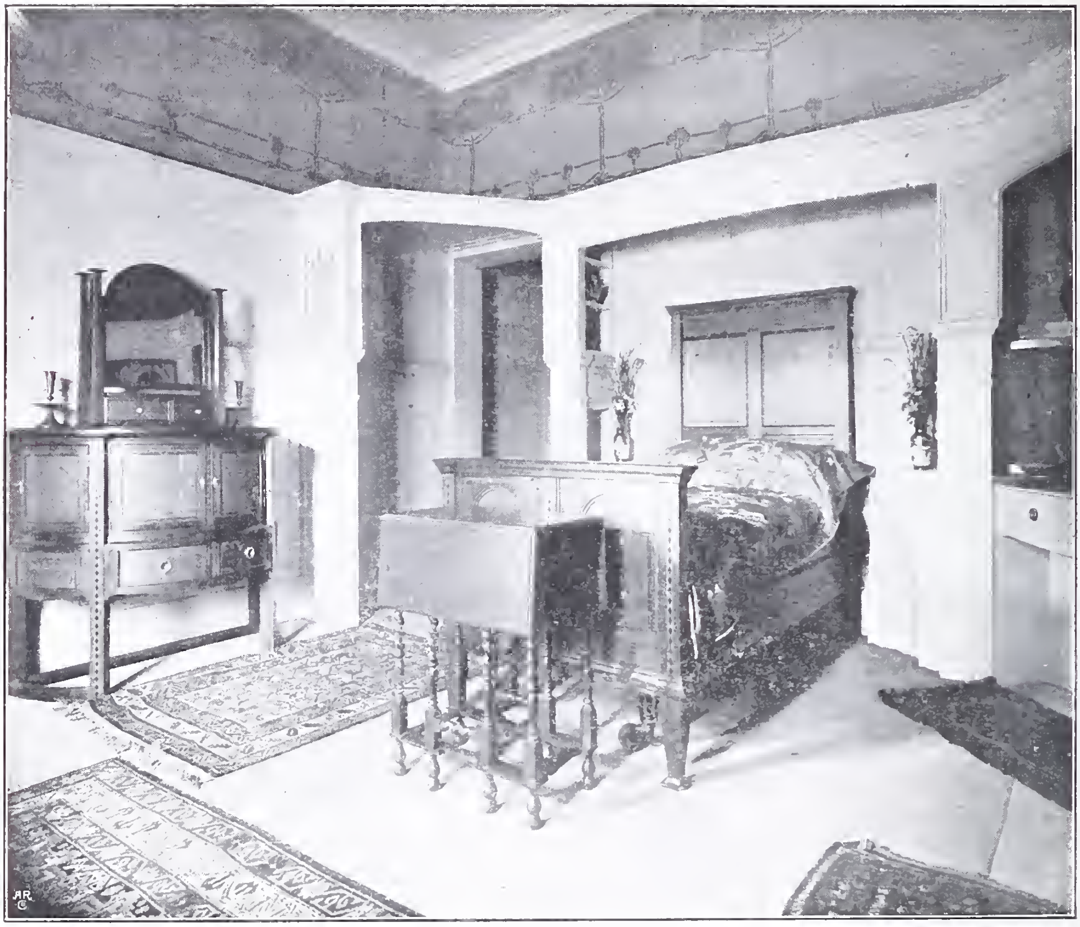

FIG. 17.—A BEDROOM "FITMENT," BY MESSRS. GILLOW.

vein as we began, although there is plenty of space for still further advance, we may congratulate ourselves on that wider diffusion of knowledge and appreciation in matters relating to Art to which modern furniture is one of the many witnesses.

Note on the Illustrations.

The accompanying illustrations are selected from among a large number which were shown by means of lantern slides, and, as far as they go, they show the kind of work which is being produced by some of the principal furniture makers of the present day. Nos. 1, 2, and 3 are by Warings, and, while based upon old examples, are adapted to serve modern requirements. No. 1 is made in mahogany with lines of satin wood inlay, all highly polished. No. 2 is of light wood and adheres less strictly to old types of treatment. No. 3 is of dark oak with a certain amount of inlay; the detail follows old examples, but no one would mistake it for an ancient piece of furniture.

Nos. 4, 5, 6, 7, and 8 are typical of the work of Messrs. Heal & Sons. They are chiefly in wood of light colour, with lines and patches of chequered inlay; considerable effect is obtained by reversing the grain of the wood in some of the panels. There is a tendency towards the omission of mouldings, but in comparing Nos. 4, 5, and 6 it will be felt that the use of the moulded cornice is fully justified by the better effect obtained.

There is more of novelty in modern bedroom furniture than in that of other rooms. Wardrobes, washstands, and bedsteads have offered more incentives to the designer than tables, chairs, and cabinets, or else the public have been more willing to see changes in their bedrooms than in their sitting-rooms. After all, the limits within which tables and chairs can be varied are not very wide, and all attempts to introduce alterations seem to lead back to well-established types.

No. 9 shows some of the exhibits at the last Paris Exhibition. They are characteristic specimens of *l'art nouveau*, ungainly, restless, even monstrous, using that adjective as implying something out of the ordinary course of nature. Far more reasonable and attractive are the examples in the Donaldson Collection, of which Nos. 10 to 16 are specimens. The peculiar flowing lines, reminiscent of water weeds, which characterise the ornament of the "New Art" appear in the bedstead (No. 10), the arm-chair (No. 11), the cabinet (No. 13), and, to a less degree, in the chair (No. 12) and the other cabinet (No. 14). The arm-chair is comfortable, although it may be contended that its lines do violence to constructional propriety. Of the other chair (No. 12) it may fairly be said that it is not so elegant as our own eighteenth-century chairs, and it sins against construction where the joint of the front leg passes through the modelling of the ornament under the front rail. Exception may also be taken to the rather meaningless shape of the stay-rail at the foot of the cabinet No. 14. But the table (No. 15) is elegant in outline and vigorous in design. It will be observed that much of the work which is usually turned or moulded is in these examples rather in the nature of carving, as may be seen in all the legs of the various pieces, in the lines of the bedstead, and in the rim of the tray (No. 16). In the last, for instance, the lines, which in moulded work would be distinct and self-contained, are here merged occasionally into one another. This treatment adds to the expense without really improving the effect. One other characteristic is to be noted, namely, the prevalence of inlay or parquetry work, some of which is very clever. The wood is usually in large pieces, advantage being taken of the natural grain and colour to obtain pictorial effects, such as a landscape with trees, fields, clouds, reeds, rocks, and flowers. (See Nos. 10, 14, 16.) The whole treatment of the various pieces is away from tradition, especially from English tradition; but it is presented by men who knew what they were about, and who clearly took delight in their work.

No. 17 is the only illustration of fixed furniture, or "fitments," which considerations of space allow. At the lecture there were a number of other examples shown. But this method of treating rooms, although necessarily included in the subject, is one in which the majority of readers of the Journal will probably consider they can give more ideas to furniture-makers than they can gain from them.

9, Conduit Street, London, W., *13th June* 1903.

CHRONICLE.

THE SPECIAL GENERAL MEETING.

Alteration of By-law 9.

The motion brought forward by the President at the Special Meeting which preceded the Business Meeting last Monday—viz. "That, subject to the sanction of the Lords of the Privy Council, the words 'during the five years from the date of approval of this provision by the Privy Council' be omitted from the proviso of By-law 9"—was carried without dissent. The by-law at present provides "that where the Council of the Institute receive a unanimous recommendation formally submitted by the Council of any Allied Society that a practising member of the profession is eligible and worthy of being elected as a Fellow the Council shall, *during the five years from the date of approval of this provision by the Privy Council*, have power to elect him, if in their opinion his work be of sufficient merit." That rule, said the President, had worked very well, and they now proposed that the rule be made general by the omission of the words referred to in the motion.

By Clause 33 of the Charter the motion must be confirmed at a Meeting held not less than seven and not more than twenty-eight days after the Meeting at which it was passed. A Meeting has therefore been convened for the 22nd inst., and it will take place immediately before the Meeting for the presentation of the Royal Gold Medal.

Mr. Frank Lishman [*A.*] sends the following communication, dated June the 9th:—

Members present at the Special General Meeting at which the foregoing resolution was proposed, seconded, and carried, as it were, straight from the Chair, will regret that the Chairman gave no opportunity for discussion.

Six years ago, when the question was first brought up, there was strong opposition, and there were many present last evening who not only would have voted but probably also have spoken against the resolution had opportunity been afforded.

The reasons against it are stronger now than they were six years ago, and they will get even stronger as time goes on. Yet to-day we are to ask the Privy Council to make permanent that which in 1897 we only asked them to give us for a five years' lease.

I submit that it is not dignified on the part of the Institute to open wide its doors and to continue to keep them open. At any rate, having had them open for five years, they ought now to be barred. He who could not, or did not care to get his Allied Society to nominate him during those five years scarcely ought to have the invitation extended indefinitely. What the Institute wants is an increase in dignity, not necessarily an accession of numbers; anyhow, dignity first. With the Allied Societies the resolution will be interpreted as a sign of weakness, and will, as a consequence, tend to diminish that respect in which the Institute ought to be held.

It is said that provincial architects of standing, not being members of the Institute, fear to submit themselves to the ordeal of election in the usual way lest they should be blackballed, and, as a consequence, they assert, ruined. I submit that having regard to the five years' grace which has been given, the susceptibilities of "wouldn't-be" members scarcely deserve further indulgence. Direct election to Fellowship ought henceforward to be for sheer merit—merit which could not fail to be appreciated by the central body. It ought to be a distinct exception to the general rule, and it would then be looked upon by the recipients as an honour—a much greater honour than such election would carry through the agency of an Allied Society.

The examination system is not a failure but a success. The resolution would seem to vote it a failure; it will tend to make it one. It is in a measure a breach of faith with those who perhaps fifteen or twenty years ago went through the examination for Associateship. For we shall be liable to have men who clearly ought to have entered by examination elected now to full Fellowship without that test.

Men not particularly keen on going in for examinations will much prefer to wait their ten years or so and then go for the Fellowship through their Allied Society. Associates were beginning to feel more confidence in the "virtue" of the Fellowship than formerly, but (if the resolution be approved by the Privy Council) there will be a reversion to their old hesitancy as to coming forward for the Fellowship.

By making this temporary proviso a permanent by-law, the Institute will lose in dignity, and will not be likely to gain even in numbers; and it had been well if, instead, the provision had been allowed to lapse.

THE BUSINESS GENERAL MEETING.

Recent Additions to the Library.

The Hon. Secretary, Mr. ALEXANDER GRAHAM, F.S.A., at the General Meeting last Monday, invited members to inspect a number of books laid on the table representing the principal additions made to the Library during the last six months. Amongst them was a work, in two volumes, on Venice and the Churches in Venice, by Professor Meldahl [*Hon. Corr. M.*], of Copenhagen. The great value of the book lay in the fact that Professor Meldahl had given what, as far as he was aware, did not appear in any other book—*i.e.* plans and sections of eighty churches in Venice. He recommended students contemplating a visit to Venice to look through the book, as they would find there a large number of churches which they might otherwise miss if they were not aware of their existence. Another distinguished member, Professor Baldwin Brown [*H.A.*], had written a work, which no doubt many members were already acquainted with, called *The Early Arts in England*, in two volumes. Anything coming from Professor Baldwin Brown would command their attention, and the Literature Committee had wisely purchased a copy for the Loan Library. He mentioned the latter fact, as he was quite sure that many members would be glad to avail themselves of the opportunity of borrowing the book. Then Mr. Max Clarke [*A.*] had presented them with a very valuable copy of Serlio's *Architettura*, Book IV. They had the more complete work in six volumes which was published in 1551; but the book Mr. Max Clarke had so kindly presented was very scarce, and was the first work ever published by Serlio. A work of a very different character was one by Herr Streit, of Vienna, to whom their thanks were due for the copy before them. It was a remarkable book, relating to a subject that had never been properly worked out—*i.e.* the evolution of theatres, their planning and arrangement, beginning with the early Greek theatres and coming down to the latest example—the late Professor Semper's magnificent Opera House at Vienna. They would find a number of illustrations relating to the Shakespearian theatres that they as Englishmen were interested in. Another important volume was that by Count Robert Lasteyrie, the well-known author on mediæval art, on the *French Sculptures of the Middle Ages*. It was probable that this book would be referred to on more than one occasion in the course of next Session, when their attention would probably be called to the sculptured figures on the west façade of Wells Cathedral. Many would remember that some forty years ago the late Professor Cockerell made a special study of these remarkable sculptures of the thirteenth century. From what he (the speaker) knew of the subject he believed that there were more than 150 life-size figures and something like three or four hundred on a smaller scale. The Dean and Chapter of Wells Cathedral had lately been repairing the west façade, and they had utilised the opportunity the scaffolding afforded of having photographs taken of all the sculptures. He mentioned the matter now because, having Count Robert Lasteyrie's book before them, they would be able to see the difference in the treatment of the human figure by French and English sculptors. Amongst the purchases made by the Literature Committee he would mention a work by Herr Ungewitter on the construction of mediæval buildings generally. The value of the book lies in the numerous illustrations of Gothic vaulting, showing the manner in which the mediæval architects and masons set to work in their scientific methods of construction, and how they overcame difficulties in constructing those extraordinary vaults that have been the delight and admiration of succeeding generations. There were also on the table some thin little books—four of them at present—on Italian towns. They are really monographs of different towns, published under the direction of Dr. Ricci, by different authors. Each book is very beautifully illustrated, and he strongly recommended students going to any of these towns in Italy to invest 3*s.* 6*d.* in the purchase of one of them. Then he came to a work by M. Durand, a monograph of the great Cathedral of Amiens. The first volume, published in 1901, related to the structural part of the edifice, and also to the exterior. The second volume, shortly to be published, will comprise the fittings and tombs and the interior of that magnificent structure. The book is beautifully illustrated, and well worthy of study. Another monograph is by Mr. J. A. Reeve on Fountains Abbey, published some years ago. He was glad to say that the Literature Committee had been able to secure a copy. Touching on this point, he would like to say that it would be well if the Institute paid a little more attention to monographs of their great buildings than had hitherto been the case. They knew what had been done on the Continent in this respect, but it was not likely that any of their younger men would go to the expense of preparing these splendid monographs. He thought, however, that the Institute might give them some little encouragement. The mental discipline that was so essential in the preparation of drawings and the study of any one building was, he thought, of far more value than the sketching haphazard of pretty things that might interest the student or take his fancy for the passing moment. Then there was a little book by Mr. F. Roe, the artist, on *Ancient Coffers and Cupboards from the earliest time to the middle of the sixteenth century*. They had no other book on the subject; but it was on somewhat similar lines to a work published a few years ago on the contents of the Museum at Cluny, though on a much smaller scale. Anybody who looked at the book would fancy that Mr. Roe, who was a painter, was an architect also: some of his geometrical drawing was excellent, especially the woodwork of the coffers. Another book he must specially draw attention to was the one published under the auspices of the École des Beaux-Arts. It consisted of the competitive work for the prizes known as the Rougevin and Godebœuf. M. Rougevin gave a prize as far back as 1857, and continued it annually, for the best sketches of decorative work in connection with architecture, and in 1881 M. Godebœuf followed it up by giving another prize. The École thought so much of these designs that they had published them, and it was interesting to us to see the tendency of decorative art in the rising generation of students in France. Then there was a splendid work by M. Ch. Brossard entitled *Géographie pittoresque et monumentale de la France*. It was commenced in 1900, and was only recently completed. Its value to the student of architecture was that the whole of France was cut up into certain districts or provinces—the north, the east, the west, and the south-east and south-west. In each volume were given maps relating to those different provinces, and the exact position of every monument and every building was marked. The work was beautifully illustrated, many of the illustrations being in colours. He hoped members would look at it before it was sent to the binders. The books he had alluded to, as well as many others purchased by the Literature Committee, would lie on the table till the end of the Session; after that they would go to the binders and be catalogued in the usual way. Mr. GRAHAM concluded by saying that these additions to the Library showed the activity of the Literature Committee. They also showed the good judgment displayed in the purchase of books likely to be of value to our students, and they further showed how we were gradually filling up the diminishing gaps in our splendid Library.

Elections to the Fellowship.

THE PRESIDENT, after the election of candidates to membership, congratulated the Institute on the very satisfactory list of members brought forward for election that evening. Many of the candidates, he said, had been Associates for some time, and had now come forward for Fellowship. He hoped others would follow their example.

The Royal Gold Medal and Annual Dinner.

THE PRESIDENT reminded members that on the Gold Medal night—viz. the 22nd June—ladies not only would be admitted, but would be welcome visitors. The Council hoped that they would have a large gathering to welcome Mr. McKim who was coming over from America specially for the occasion, and the more members who came and brought ladies the better they should be pleased. Refreshments would be served in the rooms downstairs, and they hoped to make a festive occasion of it. The same with regard to the Annual Dinner. A number of distinguished guests were coming, and he hoped that as many members as could make it convenient would attend the Dinner and help to make it a success and increase the compliment to Mr. McKim.

The Annual Elections.

The Scrutineers appointed to direct the annual elections met at the Institute on Friday the 5th inst. to receive the voting lists and count the votes. The polling had been exceptionally heavy; nearly eight hundred voting papers having been received—an excess of more than two hundred over any previous record. The work of counting began at eleven, and lasted till eight o'clock in the evening. The Scrutineers' Reports were presented at the Business Meeting last Monday, and the seals having been broken in the presence of the Meeting, the results of the elections were read out by the Secretary, and the successful candidates declared duly elected to the respective offices.

The following are the results:—

THE COUNCIL.

The Scrutineers report that 772 voting papers were received, and that they had to reject 69 for informality.

PRESIDENT.—Aston Webb, A.R.A., F.S.A. [*unopposed*].

VICE-PRESIDENTS (4).—John Belcher, A.R.A.; Thomas Edward Collcutt; Alfred Darbyshire, F.S.A.; John Slater, B.A.Lond [*unopposed*].

HONORARY SECRETARY.—Alexander Graham, F.S.A. [*unopposed*].

MEMBERS OF COUNCIL (18).—*Elected*: Edward William Mountford, 600 votes; Leonard Stokes, 577; Professor Beresford Pite, 551; Frank Baggallay, 511; Edwin Thomas Hall, 507; George Halford Fellowes Prynne, 493; John James Burnet, A.R.S.A., 488; William Howard Seth-Smith, 476; Ernest George, 470; James Sivewright Gibson, 469; Arnold Mitchell, 457; Charles Edward Bateman, 419; Alfred William Stephens Cross, M.A.Cantab., 402; John Alfred Gotch, F.S.A., 395; John William Simpson, 388; Charles Henry Heathcote, 386; George Frederick Bodley, R.A., F.S.A., 383; Samuel Bridgman Russell, 367.

Not elected: Paul Waterhouse, M.A.Oxon., 356 votes; Arthur Coman Blomfield, M.A.Cantab., 353; William Flockhart, 353; William Douglas Caröe, M.A.Cantab., F.S.A., 344; Frederic Richard Farrow, 340; Edward Augustus Gruning, 322; William Milner Fawcett, M.A. Cantab., F.S.A., 305; Samuel Perkins Pick, 297; Silvanus Trevail, 259; Henry Heathcote Statham, 253; Charles Harrison Townsend, 232; Frank Loughborough Pearson, 221; George Enoch Grayson, 205; Joseph Douglass Mathews, 204; Ralph Selden Wornum, 186; Herbert Osborn Cresswell, 157.

ASSOCIATE-MEMBERS OF COUNCIL (4).—*Elected*: Robert Shekleton Balfour, 596 votes; Henry Vaughan Lanchester, 530; Edmund Wimperis, 512; Walter John Nash Millard, 419.

Not elected: Herbert Winkler Wills, 388 votes; Arthur Thomas Bolton, 303.

REPRESENTATIVES OF ALLIED SOCIETIES (9).—*Elected*: Arthur Harrison (Birmingham Architectural Association), 544 votes; George Cappinger Ashlin, R.H.A. (Royal Institute of the Architects of Ireland), 530; Alexander Hunter Crawford (Edinburgh Architectural Association), 525; James William Beaumont (Manchester Society of Architects), 518; Arthur William Brewill (Nottingham Architectural Society), 511; Horatio Kelson Bromhead (Glasgow Institute of Architects), 502; Butler Wilson (Leeds and Yorkshire Architectural Society), 501; Joseph Wood (Bristol Society of Architects), 468; John Woolfall (Liverpool Architectural Society), 461.

Not elected: John Walton Taylor (Northern Architectural Association), 439 votes; David Morgan (Cardiff, S. Wales and Monmouthshire Architects' Society), 372; Arthur Wakerley (Leicester and Leicestershire Society of Architects), 341; Arthur Clyne (Aberdeen Society of Architects), 214.

Representative of the Architectural Association (London).—Henry Thomas Hare (*unopposed*).

Auditors.—Louis Ambler [*F.*]; William Adam Forsyth [*A.*] [*unopposed*].

ART COMMITTEE.

The Scrutineers report that twenty-eight papers had to be rejected for informality.

Fellows (10).—*Elected*: Henry Thomas Hare, 546 votes; Ernest George, 514; Leonard Stokes, 507; Thomas Edward Colleutt, 493; Edward William Mountford, 486; Sir William Emerson, 432; John William Simpson, 425; James Sivewright Gibson, 417; John Macvicar Anderson, 402; William Douglas Caröe, M.A.Cantab., F.S.A., 373.

Not elected: George Halford Fellowes Prynne, 372 votes; John James Burnet, A.R.S.A., 364; William Flockhart, 296; George Campbell Sherrin, 185; Ralph Selden Wornum, 162; Francis Thomas Verity, 161; John Henry Townsend Woodd, M.A.Cantab., 133; Herbert Read, 106.

Associates (6).—*Elected*: Robert Shekleton Balfour, 502 votes; Henry Vaughan Lanchester, 420; Edmund Wimperis, 381; William Henry Romaine-Walker, 328; Walter John Nash Millard, 306; Percy Erskine Nobbs, M.A.Edin., 261.

Not elected: John Ernest Newberry, 243 votes; Arthur Thomas Bolton, 237; Robert Watson, 222; William Gilmour Wilson, 199; Philip Appleby Robson, 188; Herbert Passmore, 172.

LITERATURE COMMITTEE.

The Scrutineers report that twenty-nine papers had to be rejected for informality.

Fellows (10).—*Elected* (*unopposed*).—John Bilson, F.S.A.; Alfred William Stephens Cross, M.A.Cantab.; Francis Hooper; William Alfred Pite; George Halford Fellowes Prynne; Richard Phenè Spiers, F.S.A.; Hugh Stannus; Henry Heathcote Statham; Charles Harrison Townsend; Paul Waterhouse, M.A.Oxon.

Associates (6).—*Elected*: Percy Leslie Waterhouse, M.A.Cantab., 435 votes; Arthur Smyth Flower, M.A.Oxon., F.S.A., 402; Professor Ravenscroft Elsey Smith, 400; Percy Scott Worthington, M.A.Oxon., 389; Arthur Maryon Watson, B.A.Lond., 347; Charles Herbert Reilly, M.A.Cantab., 334.

Not elected: John Humphreys Jones, B.A.Lond., 260; John James Joass, 255; Hubert Christian Corlette, 248; Henry Tanner, jun., 216; Frederick Dare Clapham, 169; Frederick Chatterton, 118.

PRACTICE COMMITTEE.

The Scrutineers report that forty-one papers had to be rejected for informality.

Fellows (10).—*Elected*: Samuel Flint Clarkson, 563 votes; Thomas Henry Watson, 551; Joseph Douglass Mathews, 549; Walter Hilton Nash, 537; George Hubbard, F.S.A., 531; Edmund Woodthorpe, M.A., 519; Thomas Batterbury, 514; Ernest Flint, 479; Alexander Henry Kersey, 477; James Osborne Smith, 474.

Not elected: Frederick Ernest Eales, 418; Charles Fitzroy Doll, 358.

Associates (6).—*Elected*: Max Clarke, 481 votes; William H. Atkin-Berry, 463; William Henry White, 463; Charles Henry Brodie, 461; Augustus William Tanner, 399; Herbert Hardwicke Langston, 382.

Not elected: Edwin Richard Hewitt, 364; Edward Greenop, 326; Sydney Perks, 306.

SCIENCE COMMITTEE.

The Scrutineers report that thirty-three papers had to be rejected for informality.

Fellows:—*Elected*: Herbert Duncan Searles-Wood, 554 votes; Thomas Blashill, 545; Francis Hooper, 532; James Sivewright Gibson, 529; Alfred Saxon Snell, 523; Ernest Flint, 513; Keith Downes Young, 513; William Edward Riley, 485; George Hornblower, 473; Benjamin Tabberer, 469.

Not elected: Lewis Solomon, 455; Frederic Hammond, 432.

Associates.—*Elected*: Max Clarke, 516 votes; Bernard John Dicksee, 490; Henry William Burrows, 465; George Pearson, 451; Archibald Duncan Watson, 424; Edwin Richard Hewitt, 421.

Not elected: Edward Brookes Ellis, 348 votes; Arthur Richard Mayston, 257; William Jacques, 241.

The Scrutineers of the Council Papers were Messrs. R. F. Chisholm [*F.*], George Elkington [*F.*], J. Leeming [*F.*], H. H. Wigglesworth [*F.*], Geoffry Lucas [*A.*], A. Sykes [*A.*], W. W. Wonnacott [*A.*], H. Stannus [*F.*] (Chairman). The Scrutineers of the Standing Committee Papers were—*Art*: Messrs. R. Falconer MacDonald [*F.*] and Albert W. Cleaver [*A.*]; *Literature*: F. A. Powell [*F.*] and Richard M. Roe [*F.*]; *Practice*: Henry A. Crouch [*A.*] and Thomas A. Pole [*A.*]; *Science*: W. H. Harrison [*F.*] and G. O. Scorer [*A.*]

Votes of Thanks.

The results of the Annual Elections being known, Sir Wm. Emerson, *Past President*, rose and said that if he was in order he should like to refer to the fact that there was a gentleman whose name had not been returned on the Council this time to whom the greatest thanks of the Institute were due for past services—he referred to Mr. Gruning. (*Prolonged applause.*) If there was one member of the Institute to whom the thanks of the General Body were due it was Mr. Gruning. Only those who had worked with him on the Council for so many years, as he (Sir William) had done, could know the exceptional services he had rendered to the Institute in a quiet and unassuming way. If he was in order he should like to propose a vote of thanks to Mr. Gruning for the long service he had rendered to the Institute as a Member of the Council, and also to express his personal regret that they had not been permitted to retain him for another term.

Mr. Douglass Mathews [*F.*] said he seconded the vote of thanks to Mr. Gruning with very great pleasure.

Mr. H. W. Burrows [*A.*] said that, as an old pupil of Mr. Gruning's, he would like to join in the vote of thanks to him.

The President said that he was quite sure that the vote would receive the unanimous approval of the Meeting. He had intended to propose it himself, and was very glad he had been anticipated by Sir William Emerson. As Sir William said, nobody who had not sat on the Council could realise the value of the reliable judgment Mr. Gruning had brought to bear upon all subjects that had come before them, and the immense help that it had been to them. The Council had always felt that in Mr. Gruning they had at their service a judgment on which they could rely, and that was given in the best interests of the Institute. Therefore he would put that the best thanks of the Institute be given to Mr. Gruning for his long-continued and invaluable services on the Council.

The vote was carried by acclamation.

Mr. E. A. Gruning, who spoke with some emotion, said he found it extremely difficult to acknowledge in proper terms the compliment paid to him. It was now thirty years since he had been first elected on the Council, and this was the first occasion that he had not been returned. He had now served eighteen years uninterruptedly. He could only say that he felt very deeply the compliment paid to him, and that his services in any capacity would always be at the disposal of the Institute.

The President said that there were other names which he thought it only right that he should mention. Mr. Phené Spiers had served on the Council for many years, had done them good service, and had devoted a great deal of time and attention to the Institute's affairs, but he had thought that he was now entitled to retire from active service on the Council, and therefore had not offered himself for re-election. Again they must all regret the loss of Mr. Caröe. But Mr. Caröe and Mr. Gruning they all hoped to see back on the Council, and he thought it was only a slight aberration that they were not returned this time. There were also Mr. Fawcett and Mr. Paul Waterhouse: both of them—Mr. Fawcett for many years as Vice-President as well as Member of Council—had given them their very best services. All these names he thought it was only right, after they had helped them so much, that he should mention. He mentioned them also for another reason—that he hoped that the members who were taking their places on the Council would endeavour to emulate their example, and help on their work as much as those gentlemen had done.

The President also asked the Meeting to pass a very hearty vote of thanks to the Scrutineers. A great many more votes had been polled than usual, and the Scrutineers had had to remain counting votes until eight o'clock in the evening.

This vote was also carried by acclamation.

The Institute Forms of Contract.

Proceeding to the next business on the Agenda, which related to proposed amendments in the Schedules of Conditions of Contract, the President expressed his satisfaction that they at last seemed to be within sight of a solution of a question which had occupied the Institute for a great many years.

The first time the subject was broached was on the 18th January 1887, when Mr. T. Rickman announced at a Meeting of the Practice Committee that he had been approached by the Secretary of the Institute of Builders with a view to alterations in the existing Heads of Conditions of Contract. The Committee agreed to consider the question, and a Sub-Committee was formed. The Sub-Committee submitted their draft of General Conditions to the Practice Committee on the 18th December 1888, and for the following year the draft was considered by the Practice Committee. Negotiations were then instituted (December 1889) with the Institute of Builders. On the 29th May 1891 the Committee considered the draft as altered by the Institute of Builders, and negotiations with that Body were continued through the year. On the 9th August 1892 the first Conference between the Practice Committee and the Institute of Builders was held, the representatives of the Practice Committee being Messrs. Henry Currey, H. C. Boyes, G. E. Grayson, Edwin T. Hall, and T. M. Rickman. Negotiations then continued for two or three years, but unfortunately it was found impossible to come to an agreement. In 1895 the negotiations were dropped, and in July of that year the Institute Form of Contract, which was in use from that date to April 1901, was issued.

On the 5th December 1898 the Secretary of the Institute reported that he had had an interview with the Secretary of the Institute of Builders with reference to an agreement between the two Bodies on the Arbitration Clause, and a Sub-Committee of the Council, consisting of Messrs. Aston Webb, E. A. Gruning, John Slater, Wm. Emerson, Thomas Blashill, and Edwin T. Hall, was appointed to confer with the Builders. Several meetings of the joint representatives were held, and on the 8th October 1900 the Institute of Builders forwarded the Report of the Joint Committee to the Council and stated that they were prepared to adopt it. On the 10th December the Council submitted the revised Paper to the General Body. The Arbitration Clause, however, as revised, met with such strong opposition that the Council referred the matter again to the Institute of Builders urging the modifications required to make the Clause acceptable to the R.I.B.A. After some further correspondence it was announced in April 1901 at a General Meeting that the negotiations between the Council and the Institute of Builders for a uniform Contract had failed, and at a Special

General Meeting held on the 15th April 1901 the present Form as revised by the R.I.B.A. was sanctioned. On the 19th January 1903 the President reported to the Council that the President of the Institute of Builders had expressed the willingness of the Builders to accept the Institute Form as it now stood, with the addition of a proviso to Clause 16. The matter was referred to a Committee of the Council, who on the 18th May 1903 reported that they had conferred with Mr. King and Mr. Greenwood on behalf of the Builders, who had agreed to accept the Institute Form subject only to the modifications now proposed. The President of the Institute of Builders was then requested to send a formal communication to the Council stating that his Institute and the National Federation of Master Builders were prepared to accept the two Forms of Agreement and Conditions issued by the R.I.B.A. provided the alterations were agreed to; and that the Council would then recommend the General Body to agree to the alterations.

The President went on to say that he had thought it well to give this outline of the history of the negotiations to show the care with which the documents had been prepared, with the result that the Builders had now agreed to accept the Conditions of Contract, as published and issued, with practically only a slight verbal alteration in Clause 1. That alteration had arisen because there was some doubt whether the Clause applied to drawings only, or to any alterations in the work which may be ordered. Those alterations had been accepted by the Builders, and he now recommended the Meeting to make this a final settlement of the question between the Institute and the Institute of Builders. He therefore moved that the following alterations in Clause 1 of the Contract be adopted by the Institute—viz.:

Line 3*: *for* "said" *read* "signed."

Lines 4 and 5: *for* "and instructions in explanation of the same" *read* "instructions, directions, and explanations."

Line 9: *for* "in excess of" *read* "extra to."

Line 12: *for* "excess" *read* "extra."

Bottom line: *for* "excess" *read* "extra."

Thus amended the clause would read as follows:—

1.—The works shall be carried out in accordance with the directions and to the reasonable satisfaction of the Architect, in accordance with the signed Drawings and Specification, and in accordance with such further drawings, details, instructions, directions, and explanations as may from time to time be given by the Architect. If the work shown on any such further drawings or details, or necessary to comply with any such instructions, directions, or explanations be, in the opinion of the Contractor, extra to that comprised in the Contract, he shall, before proceeding with such work, give notice in writing to this effect to the Architect. In the event of the Architect and Contractor failing to agree as to whether or not there is any extra, and of the Architect deciding that the Contractor is to carry out the said work, the Contractor shall accordingly do so, and the question whether or not there is any extra, and if so the amount thereof, shall, failing agreement, be settled by the Arbitrator as provided in Clause 32, and the Contractor shall be paid accordingly. The Contract Drawings and Specification shall remain in the custody of the Architect, and shall be produced by him at his office as and when required by the Employer or by the Contractor.

Mr. Robson: Will this apply to all England?

The President: Yes.

On a show of hands the motion was carried *nem. con.*

The President then referred to the second Form of Contract—viz. that for use where quantities form part of the contract. That form had also been accepted by the Builders, provided that the following clause be inserted after Clause 12—viz.

"12a. Should any error appear in the Bills of Quantities other than in the Contractor's prices and calculations, it shall be rectified, and such rectification shall constitute a variation of the Contract, and shall be dealt with as hereinafter provided."

That, as he understood it, meant that if any faults were found in the quantities as taken out, they might be rectified in the adjustment of the accounts at the end. Both bodies seemed to consider that it was only fair to insert such a clause, and the Council recommended that it should be added. He would therefore move this addition to Clause 12.

Mr. J. Douglass Mathews: I understand that this only applies to the Form where quantities form part of the Contract.

The President: That is so.

Mr. Douglass Mathews said he should like to say a word with reference to the resolution just passed. It would be pleasing to all members to feel that a satisfactory arrangement had at last been arrived at between the Builders' association and the Institute. He must say, however, that he should have liked the Practice Committee, who had had this matter in hand for a great many years, to have known what was taking place. Until notice of the Meeting was issued it was quite unknown to them that the matter was so near completion. This was not the only clause on which comments had been made from time to time by members of the Institute. Many had been laid before the Council and referred to the Practice Committee, and others had been sent direct to the Committee. He therefore thought that before the form of Contract was finally settled it would have been advantageous if questions which had been asked had been considered. It was a most undesirable thing that alterations should have to be continually made in the Conditions of Contract. But he took it that the matter was now finally settled, and therefore the consideration of the suggestions made must pass. At the same time he considered that if the Practice Committee had been informed of what was taking place, possibly improved Conditions of Contract might have been the result.

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* The references are to the clause as printed in the current Kalendar, p. 319.

Mr. EDWIN T. HALL [*F.*] seconded the proposal that this clause be inserted after Clause 12 of the Form where quantities form part of the Contract. This Form was put forward by the Institute about a year ago. He ventured then to draw attention to what he felt was a little defect, viz. that the Form of Conditions as drawn said that the works were to be carried out in accordance with the drawings, the specification, and the bills of quantities. A court of law had held that anything shown in any one of those was binding on the builder, so that the builder did not get what they intended he should get—the benefit of having errors in the bills of quantities corrected. The Builders had approached them with a view to their giving effect to what was the intention of the Institute and the intention of the Practice Committee, namely, that if the quantities were found to be in error they should be corrected whether the errors were *pro* or *con*. The Builders, therefore, in asking the Institute to agree to this, had asked a reasonable thing, which it was intended should be given them; and this addition merely said that if there were any errors in the measurements or description prepared by the quantity surveyor, they should be corrected, but no errors which were the result of the builder's own carelessness either in pricing or in moneying out. The reason why the matter was not sent to the Practice Committee was this. The alteration proposed was merely a verbal one, and would carry out what the Committee had originally intended. There was no time for the Builders to have a meeting to approve the action of their delegates and then to enable the Council to send the matter to the Practice Committee before the present meeting was held. It was felt that as this was the last business meeting of the Session it would be a pity to lose four or five months, as they would do if they had to bring it forward in November after it had been to the Practice Committee. The Council felt therefore that the Committee would not object to their giving effect to what was the Committee's wish by a mere verbal alteration, and he felt sure that that would commend itself to Mr. Douglass Mathews and his Committee and to the members of the General Body. He thought that members of the Institute might congratulate themselves that the judgment which they ventured to form as to the equity of their contract had been absolutely acquiesced in, not only by the Institute of Builders, but by the National Federation, which took in the whole country. It showed that they, as architects, tried to take what they were proud to believe was their rightful position; that is, the position of a judge of equity between employers and builders; and after five years the Builders had accepted the document issued as an Institute paper, with merely verbal alterations. He thought that showed that they had been just to the builders, and that these had at last recognised their justice; and, as one who had taken an active interest in this subject from the very first, he personally felt that he might congratulate the Institute that they had at last got a settlement of a very vexatious question.

Mr. H. HARDWICKE LANGSTON [*A.*] said that Mr. Hall talked about equity and fairness. Why, he asked, should they not be fair to their clients as well as to the builders? If a contractor put down a price considerably in excess of anything in the bills of quantities, and if that was carried in addition to some hundreds of pounds, was not that to be rectified? It was quite clear that the contractor was taking care of himself. They wanted equity on both sides, and not only on one side. And this clause did not give it on both sides. Why should the matter be opened up at all, if not for fair play between Contractor and Employer? The builders had plenty of time to look through the bills of quantities to see if they were correct before they agreed to the bills of quantities forming part of the contract. And where would they (the architects) land themselves? They would be in the hands of their quantity surveyors. Was not the client, the employer, entitled to have a thing rectified if the contractor carried in something that was grossly wrong and in excess? He hoped it would be referred to the Practice Committee that they might give it calm deliberation; and there was no great haste. They had waited years and years, and surely they could wait another four months. He would move as an amendment, therefore, that this matter be referred to the consideration of the Practice Committee.

Mr. JOHN SLATER, *Vice-President*, said he could not help thinking that Mr. Langston had discovered a mare's nest. It was true that there might be an error slightly in excess, but they were contemplating circumstances where the lowest tender was accepted, and, if the lowest tender was accepted, it must be perfectly clear that any slight error on the other side could not affect the general tender, and that the man who had the work was the man whose tender was lowest. It was far more likely, leaving that chance out of consideration, to benefit the employer, because they said that if the builder had carelessly priced £10 instead of £100 in the abstract, that was a case of error on the part of the builder which was far more likely to have gained him the lowest place than any excess would have done. He did not think the client need be under any apprehension as to this clause affecting his interest. He was quite sure, as Mr. Hall had said, that there had not been the slightest idea of any discourtesy towards the Practice Committee in not sending this matter up to them. But with regard to Clause 1 in the ordinary contract, and with regard to this Clause 12A, it was felt that the matter was an exceedingly small one, and that it was far more important to get the matter settled once for all than to have an elaborate and lengthy discussion on certain little points. It was, he believed, only that afternoon that they had got from the Secretary of the Institute of Builders an absolute statement that they would agree to these terms. The Institute, he felt sure, might rely upon this, that the Conditions of Contract, whether with or without Bills of Quantities, as now agreed upon would work fairly on both sides.

Mr. Langston said Mr. Slater's remark about a supposed slight to the Practice Committee was nothing to the point. He had never seen the clause till that day, and upon reading it, it struck him at once that it was a one-sided clause.

Mr. G. A. T. Middleton [*A.*] seconded Mr. Langston's amendment. Whatever might be the result, he thought it was right that a matter of this sort should go back to that Committee which had had the question in hand for so many years.

Mr. H. K. Bromhead [*F.*] said that perhaps he might mention that this rule which they now proposed to adopt in England had been carried out for twenty years, or thereabouts, in Scotland, and he thought he could assure Mr. Langston that there was no hardship or difficulty whatever. Without that clause there used to be a great hardship. He had once been himself under the unfortunate necessity, which he felt very dishonourable, of striking off £100 from a tradesman who in his calculations had added up his columns £100 too little, simply because errors were not to be rectified. But for twenty years past they had ruled under the very same kind of condition which was here proposed; and the hardship entirely disappeared if they realised this, that when the estimates came in they were uncommonly unwise if they did not themselves make a calculation and see if there were any errors, and correct those errors before the estimates were adopted. If that were done they would find that carried no injustice either to proprietor or to tradesman.

Mr. Langston said he was not denying that at all. This clause was not law. They should not have a thing one way for one man and another way for another man when both were interested in its being the same. It was so manifest that it did not require argument. He hoped the matter would go to the Practice Committee. If they wanted an alteration the Committee would thresh it out. But that proposed was no good.

Mr. C. H. Brodie suggested to Mr. Langston not to give the Practice Committee any more trouble over the matter. He took what Mr. Langston would no doubt call a one-sided view. He was Secretary to the Committee, and therefore he did not want it sent back As a matter of fact he might tell the Meeting that after the decision in *Ford* v. *Bemrose* a very important communication went from the Practice Committee to the Council suggesting that something of this sort was necessary. The Council did not see fit to accept their suggestion, but they had, he understood, accepted the suggestion of the Institute of Builders. That did not matter in the result; the thing had better go on and be carried at once. It was what they wanted.

The President said that, as had already been explained, there had been no intention whatever of any discourtesy to the Practice Committee, but after so many years they were anxious to bring the matter to a close. He fancied they should never all agree absolutely on every detail; they had got as near as they could, and he asked them to pass the clause as it stood.

Mr. Langston's amendment to refer the clause back to the Practice Committee was put, and lost, two only voting for the amendment. The motion to accept the additional Clause 12A was then put and carried with one dissentient.

The late Valère Dumortier [*Hon. Corr. M.*].

Monsieur Valère Dumortier, the distinguished Belgian architect, whose death was announced by the Hon. Secretary, Mr. Alexander Graham, at the General Meeting last Monday, had been an Hon. Corresponding Member of the Institute since 1898. He was one of the original members and founders of the Société Centrale d'Architecture de Belgique, which came into existence in 1872. He was President of that Society when the Congrès International des Architectes was held at Brussels in 1897, and attended by Professor Aitchison, Mr. Phené Spiers, and Mr. John Slater as delegates of the Institute. Monsieur Dumortier was the director of *L'Emulation*, an admirable architectural journal, and organ of the Société Centrale d'Architecture. He held the post of Provincial Architect in Chief of Brabant, and was a Chevalier of the Order of Leopold. Amongst his principal architectural works may be mentioned the Palais de Justice at Nivelles and the Hôtel Communale at Schaerbeck, illustrations of which he presented to the Institute at the time of his election as a Corresponding Member. On the motion of the Hon. Secretary the Meeting resolved that a message of condolence should be sent from the Institute to his near relatives.

Liverpool Cathedral Competition [p. 391].

The various phases in the Liverpool Cathedral Competition have been duly noted in the Journal.

The latest remains to be chronicled. The Executive Committee held a meeting on the 26th ult., and at the close thereof handed the following communication to the Press :—" After very careful and prolonged discussion, it was resolved, on the motion of Mr. R. A. Hampson, seconded by the Hon. Arthur Stanley, M.P., 'That Mr. G. F. Bodley, R.A., and Mr. Giles Gilbert Scott be approached with a view to their appointment as joint architects of the proposed Liverpool Cathedral, and that the design marked " No. 1 " be selected, subject to the above arrangement, and to such alterations and modifications as may be advised by the architects and approved by the committee; and also subject to the signing of an approved agreement.' " The author of No. 1 design is Mr. Giles Gilbert Scott, a grandson of Sir Gilbert Scott. Mr. Bodley was joint advisory architect with Mr. Norman Shaw, R.A. It has been officially explained that the original rejection of the designs arose from a difficulty in the matter of computing the accommodation in the building. This led to mutual explanations, with the result that the decision recorded above was unanimously arrived at.

The Edinburgh Association : Assignment of Province.

The fact of the Edinburgh Architectural Association coming into alliance with the Royal Institute has necessitated the apportioning to that body of a part of the province hitherto under the jurisdiction of the Glasgow Institute of Architects. At the meeting of the Council on the 8th inst. it was decided that the province of the Edinburgh Architectural Association should comprise the counties of Linlithgow, Edinburgh, Haddington, Berwick, Roxburgh, Dumfries, Selkirk, and Peebles, the remainder of the old province being under the jurisdiction of the Glasgow Institute.

Devon and Exeter Architectural Society.

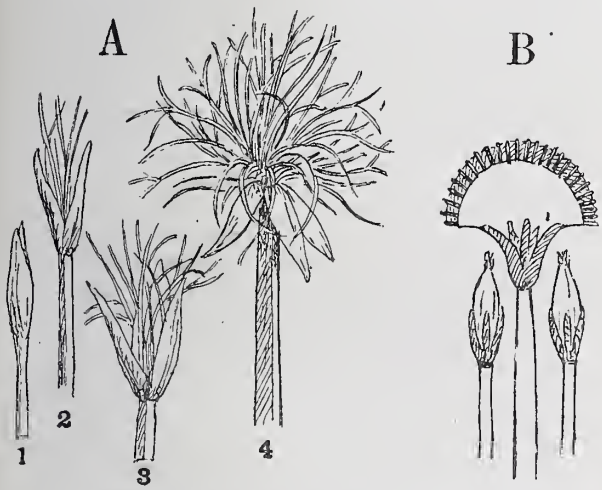
The Devon and Exeter Society have published a "Journal of Proceedings 1902–1903," and must be congratulated on its appearance. Besides containing the Annual Report of the Society and the matter usually going therewith, it has the attraction of an interesting Paper by Mr. Harbottle Reed on "Some Swiss Architecture," illustrated by his own sketches. The publication also contains the Presidential Address by Mr. J. M. Pinn; an account of the visit of the Society to Truro and Falmouth; and the Report of the Delegates of the Society to the Exeter Congress of the Royal Institute of Public Health.

ORIGINS IN EGYPTIAN ARCHITECTURE.

In connection with Sir Martin Conway's valuable Paper on the Beginnings of the Egyptian Style of Architecture [*ante*, p. 373] two questions suggest themselves. One is the question whether we can exclude timber building, as distinct from wattle-and-daub, from the consideration of origins, and the other is the question of lotus *v.* papyrus as furnishing the motive of the familiar plant-like columns which bulk so largely among the extant remains of Egyptian architecture. There is no question, as Professor Conway showed, that mud strengthened with wooden framing is the material copied in stone in many monumental Egyptian buildings of later times; but will this explain the remarkable forms on the sarcophagus of Menkaura? De Sarzec has, of course, found at Tel-lo what Loftus discovered long ago at Warka—crude brick façades enriched with rectangular vertical recesses. This might explain the upright projections and recesses on the sarcophagus; but the construction of this, as shown in Perring's geometricals—the only basis for our knowledge of it—consists in uprights crossed at right angles by horizontals; and the latter form just as prominent features as the uprights. Are these flat pieces to be explained as projecting horizontal courses of crude brick? In the absence of evidence for this in existing structures in this material it is surely better to retain in the meantime the old hypothesis of an origin in woodwork, the character of which seems so clearly to be indicated. The parts above the (presumed) doors of the façade on the sarcophagus are curiously like wooden lattice-work, and almost exactly resemble the fronts of wooden cages in which captive lions are shown in the tomb paintings of Ptah-ho-tep. The timber construction suggested by the sarcophagus may have been rare at the time, but it seems going a little far to exclude it from the "origins." Egypt was not a timberless country in the sense in which the word would apply to Central Syria, and her inhabitants were clever and busy carpenters familiar with the use of wood for furniture and other purposes.

With regard to the plant columns, I would venture to urge very strongly the view that it is a mistake to talk of "lotus" columns or "lotus" capitals. I feel convinced that whenever there is question of a supporting member it is the papyrus or some reed of the kind, and not the lotus, that has given the idea. The papyrus is in its nature stiff and strong and upright, while the lotus is a water-lily floating on the surface of the element, or raised but little above it on a curving and flaccid stem. The ancient Egyptian had better taste than to adopt such a motive for a vertical support. The papyrus is a suitable motive, because in itself, even as a single stem, it would form a support, and may have been so used for slight structures; while a bundle of papyrus stems, twelve or fifteen feet high, would have formed a very sturdy pillar. Against this plea, that we should always say "papyrus" and not "lotus" columns, there are two arguments. One is that the characteristic triangularity of the papyrus stem is by no means always shown in these petrified bundles of reeds, some of which may be seen in the British Museum. When the stems are round the arris may have been omitted through want of care, or some other reed-like growth may have been in the carver's mind. Either supposition is better than the idea of a lotus stem used as a support. The other argument is that the forms of the quasi-capitals on these columns look like lotus buds or flowers. The answer to this is that the papyrus bud and flower might easily be conventionalised into these same forms. The sketch appended shows, under A, four views of the papyrus from the plant at Kew Gardens. Fig. 1 shows a papyrus bud exactly like the bud of the water-lily, and 2, 3, and 4 show it at successive stages of its opening. The way the Egyptians represented some of these stages is shown under B, which gives a portion of a papyrus thicket in an Egyptian wall painting in the British Museum. From these to the conventionalised stone capitals of the columns the transition is easy—there is no need to bring the lotus into the question at all. Where the lotus would come in would be as a floral appendage tied on the top of a shaft to give it a festal air. The lotus was constantly used as ornament in this sort of connection. The normal bud and flower that form the tops of the stone columns are, however, certainly not tied on: they are evidently integral parts of the stems, and if the stems are reeds then the buds and flowers are those of reeds also. Sir Martin Conway's terminology seemed to show that he favours this view, and I should be glad to know whether he has come to a definite decision on the point here urged.

G. Baldwin Brown.



A. The bud of the papyrus in successive stages of its opening.
B. An Egyptian drawing of papyrus buds and flower.

LEGAL REGISTRATION OF ARCHITECTS.

46, Lincoln's Inn Fields, W.C., 23rd May 1903.

To the Editor of the Journal of the Royal Institute of British Architects.

Sir,—The publication in the Chronicle of the Journal for the 4th April of the Council's Memorandum on the subject of the Legal Registration of Architects is, I presume, a call for its open discussion; I make no apology therefore for giving some of the reasons for supporting the proposal, and I will do so by following, as far as may be, the order of the Council's arguments.

Let me say at the outset that, so far from opposing the policy suggested in the last paragraph of the Memorandum, I devoutly wish it success.

But is this a practical alternative? The slow growth of the Associate membership and the stationary condition of the Fellowship give, I fear, very little hope of the Institute including all architects of standing unless some radical change of policy is resorted to. The total membership is probably below one-tenth of the practising architects in the United Kingdom.

Although in criticising the registration proposal the Council adopts an interrogative style, it is apparently not friendly even to the general principle involved.

The interesting point, however, about this attitude is that the Institute, after years of preliminary discussion, pledged itself to the principles it now appears to controvert. That principle is that the public have a right to ascertain, from a register of names and qualifications, whether the men whom they propose to consult have had a proper architectural training. In order to supply this public want the Institute many years ago established an examination which they rendered compulsory on all who would be registered as qualified Associates.

The registration movement is nothing more nor less than a demand that this principle shall be given a wider application in accordance with precedents set by other professions in which gross ignorance and incompetence was a standing menace to various interests of the community. Would not the Institute be illogical therefore in opposing the *principle* of registration?

But supposing for the purposes of discussion it were otherwise, would it be wise or expedient to oppose it in the face of the following facts?—

1. The Fourth International Congress of Archi-

tects, held at Brussels in 1897, by a unanimous vote agreed to the following resolution :—

> "That the Architectural Societies should unite and conduct an energetic campaign to obtain from their Governments the institution of the Diploma."

2. The Fifth International Congress of Architects, held in Paris, 1900, passed a resolution, which was unanimously adopted, to the effect—

> "That Governments should take steps to protect and secure respect for the title of architect by reserving it for the future, and without retrospective action, for architects provided with a certificate of capability or by forbidding its use by others ; and, further, should place such certificate within the reach of all by the spreading of special architectural education and training."

3. The States of Iowa, Illinois, and California have passed such a law, and other of the American States are seriously considering the question. The Province of Quebec has adopted a similar policy.

4. Germany and Hungary oblige all public architectural officials (State or municipal) to have a Government diploma. In France the method of appointing Government officials *approaches* that of making a diploma necessary. In Italy, Spain, and Russia our profession is a closed one.

It has never been proposed that any legislation of this character should attempt to prevent anyone not registered under its provisions from designing any buildings they may wish to design, be they bridges, railway stations, or what not ; it would be contrary to our English spirit to do so ; but they must not call themselves architects, nor could they enforce in a court of law the payment of fees earned in their capacity of *architect*. Such outsiders, be they civil engineers, surveyors, or amateurs, could, however, call themselves by what other title they prefer, and can come to such terms with their clients as they please. This principle works without friction in the professions already registered. Callings allied to the medical do not complain because they do not enjoy the privileges of registered medical men. They either obtained a similar protection for their calling, or advise, as they do largely, under another title. The public and the professions are alike gainers.

Quite recently the Council of the Institution of Civil Engineers and that of the Surveyors' Institution were strenuously opposed to closing their membership to untrained men, but they had to yield to the demand for protection, and are now compulsory registering bodies. That so far they have not applied to Parliament for protection of their title is probably due to their membership including nearly all the men of standing in their respective professions, so that their registers are a pretty safe guide to the public. Having advanced so far, however, who will say that these powerful bodies will not, at no very distant date, seek statutory powers to close their professions ?

The "still more important question"—namely, whether under legal registration it would be possible to decide who shall call himself an architect and who shall not—is very simply answered. Each person claiming to be registered at the passing of the Act would have to sign an affidavit proving himself to have been practising as a *bona-fide* professional architect for a stated term. Such an affidavit would eliminate at the outset a large number of charlatans. After this none would be registered excepting those who had passed a reasonable test of having had an architectural training. The Institute examinations—Final and Special—would probably be accepted everywhere as such a test.

Undoubtedly there *is* a body of architects, within and without the Institute, whose opinion we respect, and who object to this proposal ; but they object to the Institute examinations also. If, however, the principle of exclusion of untrained men, adopted now so long by the Institute, appeals to the profession as a sound one, ought we to sacrifice the needs of the public and of the vast majority of architects to please a small minority —unless, indeed, they can convince us that architecture would suffer ? It was the influence of a few eminent men in their respective callings which retarded for so many years the passing of the Medical and Legal Acts, which are now admitted on all hands to have conferred untold benefits on the community and their professions alike. I venture to predict that the Council will be astonished to learn how large a proportion of the Institute's own membership will have signed the appeal which has been made to all architects to state whether they agree to the principle of registration.

Again, our objectors are said to doubt the advantage general registration would be to the art of architecture. *Here indeed is the question of questions.* Although the answer to such a question may be beyond absolute proof, is there not much to be said in favour of a sound general education and a proper professional training promoting rather than retarding art ? To hold the contrary would be like condemning horticulture on the ground that wild are superior to cultivated flowers ! Moreover, artists must then become more and more out of touch with a community daily becoming more highly educated. Will this assist art ?

We have to legislate for the *average* architect. If he is an ignorant person are not his productions a permanent disgrace to a civilised community ? The worst you will do by training him is to produce that *refined mediocrity* which is universally preferred to *vulgarity* in literature, music, painting, sculpture, and decoration. Why except architecture ?

Architecture's claim to be an art akin to that of the painter, sculptor, and musician is very true up to a point; but does not the art of building necessarily include considerable scientific and economic knowledge? And do the public, our patrons, expect anything of this kind from the other fine arts; or do they view with indifference a lack of knowledge of building construction and sanitary science on our part? The art and science of architecture are indissolubly wedded. You cannot sever them in teaching or examining. We must aim, first of all, in selecting architectural students, to exclude as best we may those who show no aptitude for art. You will not make all of them designers of *feeling*, any more than do the examinations of the Colleges of Music make all their students musical composers, or the Royal Academy schools good painters and sculptors. Many of them will be merely skilled imitators, but you will at least purge the profession from the men and the productions which now bring upon it dishonour.

We claim for the art of architecture a greater respect, and for architects a greater confidence, on the part of the public; and we hold that the public rightly withhold this confidence and respect until they have a practical assurance that we are as a profession a highly qualified class of men. It is of comparatively little importance to the public whether or not the professions of painting and sculpture are, as a whole, well trained or well organised to exclude ignorance and incompetence. With architects, however, such a state of things is highly inimical both to the financial interests and to the safety and health of the community.

As regards examinations, we are fully in sympathy with the view held by so many of our best designers among architects, that the imaginative faculty (the very spirit of design) is too subtle an essence to allow of our ascertaining *the degree* of its existence by any tests. We can, however, act on the well-recognised principle of preserving the highest ideal, and of doing our best to exclude those who show, under our rough tests, that they have neither aptitude for nor adequate training in architecture. There is no other means of ascertaining this than by examinations carefully devised and controlled by a practical body of architects. When a man has passed his examination satisfactorily he is entitled to registration of the fact as a guide to his colleagues, and the declaration of his colleagues is the most satisfactory assurance to the public that he is a trained man, and so far worthy of their confidence.

If it is not possible to examine in art how is it that our universities have established faculties of music, and that all the musical colleges examine their students in the most emotional and imaginative of all the fine arts?

To prove that cultivation (even literary or scientific) will not deter great minds from entering the ranks of artists, one need do no more than mention such names as Leonardo da Vinci, Wren, Leighton, Morris, and Burne-Jones. If the ordinary tests of competence would not have prevented such men from qualifying, who shall say that the honour it confers would not have stimulated many *more* minds of their class to exert their latent powers, and that the absence of a systematic course of study, and its tests, have not been a vast *hindrance* to architecture?

It is urged that the protection of the public would be more effectively secured by examining builders. This may follow; but until we relinquish the claim to be the directors and supervisors of builders surely we must train ourselves before legislating for others? Moreover let us consider the disastrous effects on the art of architecture if builders, who are even now supposed by an inartistic public to be more practical, and therefore safer advisers, were possessed of a diploma of competence that architects lacked! It would be like registering chemists and leaving the medical profession full of charlatans! Does not this answer deal also with the argument that our statutorily registered district and sanitary surveyors are a sufficient protection to the public in constructive and sanitary science? Would it not be preposterous to assert that because, in most urban and rural localities, there is Government supervision to protect the public against jerry-building, therefore architects need know nothing of sanitary and constructional science?

This registration movement is a reversion to the principle underlying the ancient craft guilds. They made the test and its registration *obligatory*; we allow it to be optional. Their instinct told them it was unfair to the well-qualified to be in competition with untrained men, for the obvious reason that employers had no means of judging between touting incompetents and registered competents. The higher the qualification insisted upon by the Institute for its members the greater the injustice we do them in permitting the adoption of the title of *architect* by men who have no fitting education in the art. To put it briefly by permitting the continuance of the present optional system we give status to incompetency.

The Institute is the only body possessing the requisite influence to promote successfully this much needed reform. Would it not by its realisation establish a claim on the gratitude of all present and future architects as well as on the community requiring their services? It would create a great and cultivated profession, and a great profession tends to make great men.

The Institute could *at the present time* in all probability obtain statutory powers constituting itself the sole examining body for the profession in England; but the opportunity will apparently soon be past. Would not such powers give it largely increased prestige, as well as the means to extend its influence?

I am, Sir, your obedient Servant,
W. Howard Seth-Smith.

REVIEWS.

SUBURBAN HOUSES.

Modern Suburban Houses. By C. R. Snell. 8o. Lond. 1903. *Price 7s. 6d. net. [B. T. Batsford, 94, High Holborn.]*

In his preface the author expresses the hope that the publication of this volume will lead to some improvement in the planning and designing of suburban houses. With a view to the accomplishment of this desirable end the publication is divided into two sections, the first of which consists of some observations on and practical hints concerning suburban houses; and the second, of eighteen designs with short description and comments.

In the portion of the letterpress giving hints that have special reference to the comfort and convenience of the occupants, information as to the size and position of rooms &c. is given; but the information, although sensible, is elementary, and it is difficult to see of what substantial service it will be either to the architect or his client.

The chief portion of the volume, however, consists of eighteen designs with descriptive notes; and it is a pity that the author in the preparation of these designs has not taken a few of his own hints, or others perhaps equally important, the value of which lies in their application. In design No. 1, for instance, the kitchen range is placed between two windows in the same wall; a very bad arrangement, as the cook cannot, without the aid of artificial light, see into her pots, pans, and ovens; then the larder opens directly from the hot kitchen. In design No. 4 the same faulty arrangement of kitchen range is to be found, and there is a deficiency of the cupboard and pantry accommodation called for by every good housewife.

The effective lighting of kitchens, which is one of the first essentials in a well-planned house, appears to have been overlooked or ignored in many of the plans, and the doubtful expedient of knocking corners out of rooms to secure passageway is frequently resorted to, and not always successfully.

Want of space renders it impossible to criticise the designs in detail, nor is it necessary. Several of the larger planned houses are more satisfactory, but the problem of how to plan small suburban residences so that they will have such convenience and methods of arrangement as are essential to the complete comfort of their occupants has not been solved by the volume before us, nor the solution materially helped forward.

Regarding external designs it is to be regretted that the author has not taken his own advice to cultivate a dignified simplicity, or even simplicity without dignity, which in these designs is only conspicuous by its entire absence.

The book will probably appeal to those gentlemen who provide houses for the million, but as a help to the young architect it will be of little service unless the elevations be taken as examples of what he ought to avoid.

W. G. Wilson.

PERSPECTIVE.

The Principles of Architectural Perspective. By G. A. T. Middleton [A.]. 8o. Lond. 1903. Price 2s. 6d. net. [B. T. Batsford, 94, High Holborn, W.C.]

It seems a pity that so fascinating a branch of Art as perspective should suffer from the prejudice engendered by the common belief that there is in it anything abstruse. The student who commences the study of it—and this is particularly the case with the architectural draughtsman—must very soon be surprised at its simplicity. There is no doubt that the majority of treatises on the subject are of no sort of use to the practical draughtsman, to whom they are, as often as not, a hindrance, and serve only to perpetuate an obscurity which need never have been associated with it.

The fault lies generally with the authors, who saturate their enunciations of its principles with Euclidian profundity, and display in the process a positive genius for eliminating from their subject its natural attractiveness.

It thus comes about that in the experience of many of us the most effectual and, indeed, general method of acquiring the art is to set up boldly in perspective some modestly proportioned building under the friendly, though perhaps patronising, guidance of a chief assistant. The broad principles of the system in general use among architects very soon take definite shape in the mind of the student, and its incidental difficulties are overcome by his own common sense. The writer would not wish it to be inferred that he deprecates a close study of the theory of perspective, though it is nevertheless true that admirable results are obtained by men who never troubled to acquire such a knowledge of it.

Mr. Middleton, in his second work on architectural perspective, just published, quite rightly says that a thorough acquaintance with the theory of perspective enables the draughtsman to dispense with direct projection from a plan specially laid down for the purpose. It cannot be said, however, that this method of "building up," so to speak, is always convenient, since it involves the use of measuring points, and often many "accidental" vanishing points, in addition to the two primary ones; and since architects have discarded it for the possibly less scientific method now in use, one is justified in describing it as impracticable.

The book now under consideration is, if anything, too concise in treatment, and in places quite reminiscent of the immortal but dread Euclid. Many of the diagrams have a very learned and forbidding appearance, and do not tend to awaken the interest of the plain man. Surely this need not have been. Mere lines and points are not inviting save to the mathematically inclined, and such a very little addition to them would have converted them into something for which we could have felt some sympathy—such as a tiled floor or a range of window openings. In this sense only may the book be considered inadequate, since from end to end it is full of the very essence of perspective.

Notwithstanding the general disinclination to use vanishing-points for lines in oblique planes, a careful perusal of Chapter X. will repay anyone. The method of obtaining them and their application to the setting up of a series of dormers are very well set forth both in the text and diagram (fig. 36).

The most important illustration in the book—fig. 27—is an unfortunate one. Apart from the design of the house, which, strictly speaking, has nothing whatever to do with the perspective, the position taken up by the spectator has produced a very unpleasant result. The "feature" of the building, a square bay set angle-wise to the main walls, shows so little of its gabled front as to impart to it a shorn appearance of a very uncomfortable nature. In view, too, of the imperative need for reducing to a minimum the number of lines on the plan, there was no occasion to indicate the thicknesses of the walls, especially since they could be of no use.

There are useful chapters on shadows and reflections and one on isometric projection, and the book concludes with a series of finished perspectives reproduced from drawings which illustrate in some instances everyday work by well-known architects. It is, however, not easy to divine what purpose is served by the inclusion of the very tame outline drawing of the interior of a lecture-hall. Mr. Wood's drawing of Lincoln Cathedral (which suffers from over-reduction) and Mr. Spiers's clever drawing of the choir roof at Oxford Cathedral ought not, in the writer's opinion, to be given as illustrations to a work of this kind, seeing that they are both freehand drawings. It is open to question whether the beautiful effect of the latter could have been produced by setting up the lines according to the rules of perspective. The practised eye of the artist has avoided the distortion which is so commonly the result of mechanically produced interiors.

Frederick Chatterton.

ALLIED SOCIETIES.

GLASGOW INSTITUTE OF ARCHITECTS.

The Royal Infirmary Reconstruction.

115 St. Vincent Street, Glasgow : 29th May 1903.

To the Editor of the Journal of the Royal Institute of British Architects,—

Sir,—The Managers of the Royal Infirmary having finally rejected the criticisms of the Glasgow Institute of Architects regarding their rebuilding scheme, and refused the advice and assistance offered by that body, the Institute feels it to be its duty to set the whole facts before the general public, those on whose behalf it has acted and for whose benefit the Infirmary exists.

By way of preface to the correspondence, which must be read for adequate appreciation of the situation, a short *résumé* is here given of the salient facts:—

From 1897, when the scheme was first mooted, till the end of 1899, the Managers were engaged in endeavouring to obtain, under their direction, satisfactory plans from an architect selected (despite outside and inside criticism) by themselves, but those were finally set aside and a competition instituted. This was undertaken in January 1900, when ten selected architects were invited to send in designs, Dr. (now Sir) Rowand Anderson being appointed assessor. Undeterred by previous failure, however, the Managers (together with the Executive Committee now acting with them) *first* proceeded to have a species of preliminary competition among themselves, and as the result produced and issued to the competitors two "suggestive and illustrative" sketch plans. Of both of these the "Jubilee block," fronting Cathedral Square, was an essential feature. The general lines of the sketch plans thus produced, and especially the situation of the Jubilee block, were found so radically faulty by most of the competing architects that all of them who had a previous reputation as hospital experts found it necessary to depart more or less entirely from them in the designs they submitted. Of the ten designs the assessor made a short leet of four, and a final selection of one, which he recommended for adoption. The Committee, influenced apparently by their own sketch plans and their "own opinion as to style of architecture," set aside the award and chose a design, outside even of the short leet, which was simply a more fully detailed copy of their "suggestive" draft.

The Institute of Architects, in May 1901, addressed to the Managers its first protest and appeal, criticising both the way in which the competition had been decided and the result arrived at, objecting to the whole arrangement of the selected plan as inadequate and out of date, and to the Jubilee block as shutting out the sun and air from the south, as well as at the same time vitally injuring the appearance of the Cathedral, and, finally, requesting that the whole of the plans should be submitted to one or more hospital experts before anything further should be done.

To this no reply was received beyond a formal acknowledgment and reference to an official statement to the public which appeared in the press on 18th May 1901. In this the criticisms of the Institute were in no way answered, and its suggestion of expert assistance was ignored; but it included (with reference to points raised elsewhere) the important statement that the Managers now recognised "that the new hospital and not a section of it (*i.e.* the 'Jubilee block') should be regarded . . . as a fitting memorial to the sixty-three years' illustrious reign of the Queen."

In June of the same year the Institute again addressed the Managers, reaffirming its criticism, and offering to bear the expense of the course suggested should its opinions not be borne out.

To this no reply was received.

On several occasions during the past winter, and especially at the annual general meeting of the Infirmary, it was stated that the original scheme was to be retained *in toto*, and the work pushed on with vigour. Accordingly the Institute thought it necessary once more to draw the Managers' attention to the fact that no adequate replies had been received to its previous communications, and to press for an answer, with the result only that it was assured by the Managers that it was their intention, *after* the plans had been more fully developed, to submit them to "experts—surgical, medical, and mechanical."

This the Institute, in reply, pointed out would in no way meet the difficulties raised, that expert guidance would then come too late, and might well be set aside as at the first stage of the proceedings. To this last appeal the Secretary has replied closing the correspondence.

It is only under a sense of duty to the public, and after repeated and careful consideration, that the Institute has felt itself warranted in criticising, and so far joining issue with the Managers in their onerous and disinterested labours on behalf of a great public institution. In this instance the Institute believes the Managers' labours to have been misdirected in matters of procedure and yet of the utmost importance, and the Managers declining, as they do so far, to meet in any way the advice offered, it remains only to communicate to the public this belief.

In name and on behalf of the Glasgow Institute of Architects.

C. J. MacLean, *Secretary*.

Assessor's Report.

16 *Rutland Square, Edinburgh*: 9 *Nov*. 1900.

Gentlemen,—In this competition ten architects have sent in plans; two of them have sent in alternative designs, making 12 sets—in all, 158 drawings. I have gone over in detail each individual plan, and compared the accommodation given with the specification of requirements, and, generally speaking, all that has been asked for has been given, but, of course, in different ways. As the Committee have instructed competitors that a pathological institute need not necessarily be included in the plans, my observations will be limited to the Infirmary proper and the isolation wards. Each design is illustrated by the floor plans of the different buildings and elevations of the façades, all drawn to a uniform scale, as stipulated for in clause 8 of the terms and conditions of competition. Separate drawings, in accordance with clause 9, showing the method of heating and ventilating, have been submitted by all the competitors except the author of design marked H. Each competitor has submitted a descriptive memorandum and estimate of the probable cost. The competitors have, with the exception of B and D, complied with clause 18, asking that the façade of the south block should be, by the character of its architecture, commemorative of the Diamond Jubilee of Her Majesty the Queen. B and D have no south block, but a large court. In design B the whole court is treated in an important architectural manner. In design D there is no distinctive part of the court treated in an important architectural manner, but there is shown in the centre of the court a statue of Her Majesty. The plans submitted by the Committee have been more or less followed by some of the competitors, while others have entirely departed from them. Designs E and F may be taken as examples of closely following the Committee's plans, while designs B and D are an entire departure from them. After a careful and exhaustive study of each design, I placed on a short leet designs A, F, H, and J. In bringing to a focus my opinion of the relative merits of these designs I have kept specially in view:—

1st. Careful planning, with adaptation to site, and to the amount of sunlight the buildings would receive.

2nd. The manner in which the plans lend themselves to the reconstruction of the new Infirmary.

3rd. The architectural treatment of the building, and especially of the south front, as a commemorative memorial of the Queen's Diamond Jubilee.

I conclude to place F first, H second, J third, and A fourth.—I am, yours faithfully,

R. Rowand Anderson.

115 *St. Vincent Street, Glasgow*: 21 *Jan*. 1901.

To the Chairman and Managers of the
Glasgow Royal Infirmary.

Gentlemen,—Recognising it to be your earnest desire that the Infirmary, when reconstructed, should conform to the most modern standards of design in this class of building, and that the subscribers and the general public have a right to expect this, we, the Glasgow Institute of Architects, as a body of technical experts in such matters, feel it to be our duty to state that, in our opinion, this result will not be achieved if the reconstruction is proceeded with according to the plans selected by your Sub-Committee in the recent competition.

We attribute this failure, not to any lack of zeal on the part of your Committee, or of ability on the part of the competing architects, but mainly to the manner in which the competition was initiated and carried through, and that in the following respects among others:—

I.—That along with the printed conditions provided for the competition there were issued two sets of sketch plans as indicative of alternative arrangements which the Sub-Committee recommended, and which were stated in the accompanying report to be drawn by or under the direction of two members of the Sub-Committee respectively.

II.—That a Jubilee block, to be situated on a particular part of the site, was insisted upon as an integral part of the scheme.

The results of these elements in the conditions were:—

(*a*) That the competitors and the assessor were hampered in the exercise of their individual judgment as to the main points of importance in such a building—viz. the distribution of the various buildings with respect to each other for convenience of working and of all for the freest access of sun and air.

(*b*) That the competitors were placed in the invidious position that, in the event of the schemes recommended by the Committee not proving themselves to be in accord with their judgment and experience, they were bound, in departing from them, to meet with disfavour from those influential members of the Committee who would enter upon the examination of all the plans with minds necessarily biassed in favour of those which they themselves had put forward, while reserving their position as judges.

(*c*) That as the result, the proposal that plan E be accepted, which became the finding of the meeting, was moved by the gentleman who was actually the author of the scheme which was adopted and worked out in detail by this competitor.

III.—That neither of the sketch plans issued is in accord with the present-day principles of hospital design, as might indeed be expected, seeing that their authors have not enjoyed the training which would qualify them as surgical, medical, or architectural experts; that, in fact, the plans are in many vital particulars inadequate and out-of-date, and that these faults are naturally displayed equally in the selected design, which is but an elaboration of one of them. A corroboration of this assertion with regard to the radical faultiness of the plans in question is furnished by the fact that six out of the ten competing architects found it necessary, in spite of risk of possible consequences already alluded to, to entirely throw over the schemes furnished to them, and that among this number are found all the four architects from outside of Glasgow (two from London and two from Edinburgh), who were presumably invited specially on account of their knowledge of hospital design.

Such being the opinion of the Institute after a very mature and careful consideration of the whole subject, we would most earnestly urge the Managers, before committing themselves and the public to the erection of any portion of the building, as designed, to have the plans submitted to one or more independent hospital authorities of recognised and outstanding position, for consideration and report.

Apart from the all-important question of the erection with the public funds of an entirely adequate and modern hospital, we, the Institute of Architects, feel it necessary to lodge a protest against the setting aside by the Sub-Committee, without any reason given, of the award of the professional assessor, Dr. Rowand Anderson—the more so that a simple majority of one was considered sufficient to overturn his judgment—as liable to prejudice the success, alike for promoters and architects, of future competitions in Glasgow. And we have further to state that the erection of a Jubilee block, such as is proposed, seven storeys high, and in the position selected, will, if proceeded with, dwarf and irretrievably injure for all time the external appearance of the Cathedral. The foregoing statements represent the unanimous finding of the Glasgow Institute of Architects, at a meeting specially called to consider a report of the Council on the question; and as the matter is not only one of the greatest public importance, but of extreme urgency, owing to the proposal of your Sub-Committee to proceed at once with the erection of the northern block, it has been communicated to the public press at the same time as it is submitted, with our earnest prayer for its consideration, to yourselves.

In name and on behalf of the Glasgow Institute of Architects.

C. J. MacLean, *Secretary.*

115 *St. Vincent Street, Glasgow:* 29 *March* 1901

To J. Nicol, Esq., Secretary, Executive Committee on Reconstruction of Royal Infirmary, City Chambers.

Dear Sir,—In acknowledging the letter of this Institute, dated 21st January, the Secretary of the Infirmary mentioned that the matters with which that letter deals belong to the Executive Committee on the Reconstruction of the Infirmary originally appointed, of which the Lord Provost is Convener and you are Secretary; but beyond that formal acknowledgment this Institute has received no answer to the letter. I am now instructed to request a reply, and for your convenience I enclose copy of the letter referred to.—Yours truly,

(Signed) C. J. MacLean.

Glasgow: 18*th May* 1901.

To C. J. MacLean, Esq., Secretary, Glasgow Institute of Architects, 115 *St. Vincent Street.*

Dear Sir,—With reference to your letter to me of 29th March, I had the opportunity yesterday of submitting it to the Executive Committee. It so happened that the Committee at yesterday's meeting approved of a statement for the information of the public on the whole subject of the Royal Infirmary Subscription Scheme, and as it deals also with the matter of your letter, I send you copy of the statement, which will serve as the Committee's answer to your letter. The statement also appears in this morning's papers.—Yours truly,

J. Nicol.

Excerpt from Official Statement.

While such questions were being discussed between the Managers and the Executive Committee of Contributors, and between the Managers and the staff, other points were raised in the public press and elsewhere, by which the plans for the reconstructed infirmary had been selected, as well as of the adopted plan itself. It is necessary, therefore, in order to the removal of misconceptions from the public mind, to refer to the various points which have been mentioned.

THE RECONSTRUCTION PLANS.

In regard to the plans, this must be said—The Executive Committee and the Managers bestowed on the subject lengthened and painstaking consideration. Authorities on Hospital construction were consulted, visits were paid to the best hospitals in Great Britain and America, and the views of the staff of the infirmary as to the general conditions and special requirements of the institution were carefully ascertained. As a result of all this, seven sketch plans were, under direction of the Managers, prepared by Mr. George Hill, comprehending the provisions specified by the staff, and after due consideration agreed to by the Managers, as necessary for an infirmary which was desired to be abreast of the foremost institutions of the kind. Of these sketch plans, two which were specially selected by the Managers, were submitted to ten selected architects, but were distinctly stated to be "suggestive and illustrative only," not binding. To assist the Executive Committee in deciding on the competing plans, Dr. Rowand Anderson was appointed as their assessor, his function being, as he himself frankly acknowledged, to guide and advise, not to select. When the final selection was made, the Executive Committee fixed on a plan which the assessor reported as being *one of two which most closely conformed to the sketch plans.* The other of these two plans the assessor had placed first of all, but he had not included in his short leet that fixed on by the Executive Committee. Further interviews with the assessor satisfied the Executive Committee that its exclusion arose from no failure on the part of the selected plan in regard to vital or essential particulars, but chiefly from a difference of opinion in regard to the style of architecture and the general elevation—matters on which the Executive Committee ventured to think they were quite entitled to follow their own opinion; and the minority cordially acquiesced in the selection of the majority.

INTERNAL ARRANGEMENTS.

As regards internal arrangements, the plan selected by the Executive Committee is to be preferred, for the following reasons:

1st—That it provides on the main floor of through corridor communication from end to end of the building without passing through any of the wards.

2nd—On account of the superior lighting of the wards, by which every bed shall have share of a window for light and ventilation.

3rd—That the venereal ward shall be isolated from all other wards.

4th—That small wards or side rooms are conveniently situated, so that they can be entered without passing through the main wards; and

5th—It gives a promenade on the roof for convalescent patients.

Like most other plans of similar magnitude, the internal arrangements of this plan are in some respects, no doubt, open to modification and improvement, and every care will be taken by those responsible for the work to ensure that all the arrangements shall be as perfect as possible.

THE INFIRMARY AND THE CATHEDRAL.

It has been alleged that the buildings, being so lofty, will dwarf the Cathedral. The buildings must be lofty if the hospital requirements of the public are to be adequately met, and the Executive Committee believe that they have shown discretion in approving the architectural style of the adopted plan. It is distinctively Scottish—the national art of the fifteenth and sixteenth centuries, of which we have examples in Heriot's Hospital, Holyrood, Linlithgow, and Falkland palaces, and in our own old college lately in the High Street. It is, therefore, not only appropriate to the historical associations of the site upon which stood the castellated bishop's palace, but permitting, as it does, a limited use of Gothic forms—as in Heriot's Hospital, Edinburgh—it is more in harmony with the Cathedral itself than any classic or modern style. It was not, however, this consideration, but the superiority of the plans, which chiefly influenced the judgment of the Executive Committee.

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115 *St. Vincent Street, Glasgow*: 25 *June* 1901.

To the Executive Committee of the Contributors to
the Royal Infirmary Reconstruction Scheme.

Gentlemen,—I duly received your letter of 18th ult., which has already been acknowledged, and I am instructed to state that the Glasgow Institute of Architects regrets that no more explicit reply has been vouchsafed to its Protest and Appeal, by the Managers and the Executive, than what is contained in the Official Statement issued to the public. Nothing in that Statement in any way answers or refutes the objections previously raised by the Institute. The Statement, indeed, rather confirms them; and the Institute therefore remains of the opinion that the Plans as adopted "are in many vital particulars inadequate and out of date"; that their distribution on the site, particularly with regard to the "Jubilee block," facing Cathedral Square, is bad, and that in consequence, if the reconstruction is proceeded with according to those plans, "the Infirmary will not conform to the most modern standards of design in this class of building."

The criticisms of the Institute on the previous occasion were chiefly concerned with (1) the manner in which the Competition was conducted, according to which solutions of the problem other than those put forward by the managers did not receive unbiassed and adequate consideration; and (2) the insistence on the Jubilee block as an integral part of the scheme. Such a block the Institute considered to be objectionable, because (*a*) it would shut out from the rest of the buildings the sun and air from the southern and most open part of the surrounding area; and (*b*) it would dwarf and irretrievably injure the external appearance of the Cathedral.

With regard to the first of these two points, while the Managers in their letter refer to the block plans which they had prepared with much time and labour as being "suggestive and illustrative only," and this is repeated in the Statement and Appeal of the Executive, one learns also from this latter that "when the final selection was made the Executive Committee fixed on a plan which the Assessor reported as being one of two which most closely conformed to the sketch plans," *i.e.*, those drawn up by the Managers. As further reason for the adoption of this particular plan the Executive give a list of special characteristics in respect to internal arrangements which they consider to be essential or desirable features, yet these were all contained in other designs submitted, which were at the same time free from the radical defects referred to.

As to the Jubilee block, the Managers now state as their sixth conclusion—"That the new Hospital, and not a section of it, should be regarded as alone worthy of the City of Glasgow, and as a fitting memorial to the sixty-three years' illustrious reign of the Queen." This is exactly the position adopted by several of the competitors, and by the Institute, while objecting, from practical reasons already stated, to its inclusion as part of the Scheme. With reference to the Cathedral, it is, therefore, quite beside the point for the Executive to state that "the buildings must be lofty if the hospital requirements of the public are to be adequately met," for, while the buildings must be lofty, on other portions of the site (if that site is to be retained) there is no necessity for their being lofty in the direct alignment with the Cathedral, nor, indeed, for there being any buildings at this point at all, as was shown in one or more of the plans submitted. The Institute does not admit that the injury to the Cathedral is a question of architectural style; it is one of comparative height and scale. As regards these, the plan adapted is especially objectionable in that not only is the block itself seven storeys high, but it has in addition a lofty spire which would further and quite unnecessarily assist to dominate and destroy the effect of the Cathedral.

The Institute of Architects feel it to be their duty in the interests of the public (for whom they speak as a body of technical experts in such matters), to thus repeat and emphasise their protest, and to again most earnestly urge the Executive, before committing themselves and the public to the erection of any portion of the building, as designed, to have the plans submitted to one or more independent Hospital authorities of recognised and outstanding position, for consideration and report. Further, should the Executive object to the outlay involved in such a course, the Institute would be prepared to arrange for it and to meet the cost provided the Report did not bear out their contention, while submitting beforehand the name or names of the experts proposed, on obtaining the necessary facilities from the Executive.—Yours truly,

C. J. MacLean, *Secretary.*

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115 *St. Vincent Street, Glasgow*: 10 *Feb.* 1903.

To the Chairman and Managers of the Royal Infirmary.

Gentlemen,—In the matter of the proposed rebuilding of the Infirmary, I am instructed by my Council to remind you that, in January 1901, and again in June of the same year, a protest and appeal were put forth by this Institute addressed, in the first instance, to yourselves, and in the second to the then "Executive Committee." To neither was a direct or adequate reply received at the time, and it has been recently stated in the public press that it is proposed to proceed shortly with the work on the original lines. In these circumstances, the Council of the Institute has again had the matter under consideration; it remains of the same opinions previously expressed (and unanimously confirmed by the general body of the Institute), as set forth in the memorials then submitted, and of which copies are enclosed. My Council would therefore again beg you, in the interests alike of the Infirmary and the City of Glasgow, to give the proposals therein contained your earnest and favourable consideration.

Yours truly,
C. J. MacLean, *Secretary.*

Glasgow Royal Infirmary, Secretary's Office,
26th February 1903.

To C. J. MacLean, Esq., Secretary,
Glasgow Institute of Architects.

Dear Sir,—I am instructed by the Managers of the Royal Infirmary to acknowledge receipt of your letter, dated 10th inst., and to say that they having accepted the plan adopted by the Executive Committee, believing it to be the best obtainable after a perfectly fair adjudication among ten architects of acknowledged standing, the Glasgow Institute of Architects may rest assured that the Managers will spare no pains to make the new Infirmary conform to the most recent advances in hospital construction. I am to add that it is their intention, as it always has been, to submit the internal arrangements when further adjusted to experts—surgical, medical, and mechanical—on whose knowledge and experience they can rely.

I am, yours truly,
Henry Lamond, *Secretary.*

115 *St. Vincent Street, Glasgow: 27th March* 1903.

To Henry Lamond, Esq., Secretary,
Glasgow Royal Infirmary.

Dear Sir,—I duly received your letter of 26th ult., which has been carefully considered by my Council, with the result that they cannot but hold it an unsatisfactory and inadequate reply to this Institute's previous memorials and letters to you on the subject.

The Institute's objections to the proposed scheme as previously expressed may, in the main, be summed up under three heads:—(1) The setting aside of the assessor's award, and other unsatisfactory features of the adjudication on the competition designs with the resultant injustice to the competitors. (2) The nature of the design thus selected, as regards its faulty distribution of the buildings on the site, and especially the seven storey "Jubilee block," placed so as to shut out the sun and air from the surrounding area. (3) The irretrievable injury to the Cathedral from the contiguity of this abnormally lofty building.

Your intimation that "the internal arrangements will be submitted to experts—surgical, medical, and mechanical"—after the further development of the plans, is therefore not to the point, as not one of the Institute's objections above stated will be met or satisfied by the course thus indicated. Further, there is no indication that other points in connection with the internal and external treatment of the buildings, which the Institute objects to, but has hitherto refrained from specifying in detail, will be satisfactorily dealt with by such experts, or, if they are, that they will be given effect to *after* the plans have been developed, especially as the expert opinion previously engaged by the Board in the person of the Assessor was disregarded, and that which the Institute now proposes is apparently refused.

The submission of the whole scheme in its present state to one or more experts of acknowledged position from a distance, which the Institute in 1901 offered to arrange for and, if need were, to itself pay for, still seems the only way in which the Board can meet the criticism of the Institute and set itself right with the public. My Council is therefore at a loss to understand why the Managers have not seen their way to adopt this course in the past, and, while giving no reasons to the contrary, from the tenor of your letter, apparently still refuse to do so.

May I ask, before making this further correspondence public, if found necessary, for a definite statement from you regarding the above policy?

In name and on behalf of the Glasgow Institute of Architects.—Yours truly,

C. J. MacLean, *Secretary.*

Glasgow Royal Infirmary, Secretary's Office:
9th April 1903.

To C. J. MacLean, Esq., 115, *St. Vincent Street.*

Dear Sir,—I am instructed by the Managers of the Royal Infirmary to acknowledge receipt of your letter to me of the 27th ult., and to say, in reply, that, while they do not accept the criticisms of your Institute as accurate, they have given them further careful consideration, and are unable to see what good purpose can be served by a continuation of this correspondence.

I am, yours truly,
Henry Lamond, *Secretary.*

LEGAL.

DUTIES OF DISTRICT SURVEYORS.

London Building Act, 1894, ss. 72, 145: "Building, Structure, or Work."

WOODTHORPE *v.* THE CHARING CROSS AND STRAND ELECTRICITY SUPPLY CORPORATION, LIMITED.

The Charing Cross and Strand Electricity Supply Corporation, of 15 Maiden Lane, were summoned at the instance of Mr. Edmund Woodthorpe, District Surveyor for the Northern Division of the City of London, for having failed to give notice in accordance with the London Building Act, 1894, before they commenced certain works, namely—"the construction of a certain inspection chamber under the street at the corner of Wormwood Street and Bishopsgate Street Within." The case was heard at the Guildhall on the 3rd January 1902, by Mr. Alderman Crosby, who gave his decision on the 13th January 1902, finding as facts that the Company were the persons causing or directing the work in question to be executed in the street; that the work was a street box necessary for purposes in connection with the supply of electric energy by the Company, and that no notice was given to the District Surveyor in accordance with Section 145 of the London Building Act, 1894. He held that this was a building, structure, or work within the meaning of the Act, and was unable to distinguish the case from the case of *Crow* v. *Whitechapel Board of Works.* He therefore convicted the Company, and fined them the sum of 40*s.*, and £2 2*s.* costs.

Mr. Shiress Will, K.C., for the Company, asked the Alderman to state a case, and upon his refusal, the Electric Light Company applied to the High Court and obtained a rule nisi which was made absolute.

The appeal was heard on the 15th May 1903 in the King's Bench Division, before the Lord Chief Justice, Mr. Justice Wills, and Mr. Justice Channell.

Mr. Shiress Will, K.C., and Mr. Daldy appeared for the Company, and Mr. Horace Avory, K.C., and Mr. Rowsell for Mr. Woodthorpe.

After hearing the arguments all three Judges delivered separate judgments in Mr. Woodthorpe's favour as follows :—

THE LORD CHIEF JUSTICE : The consideration of the arguments in this case has satisfied me that there is no substantial distinction between this case and *The Whitechapel Board of Works* v. *Crow* (84 *L. J.* N.S., and 65 J. P.), and it has also satisfied me, speaking for myself, that the decision in the Whitechapel case was right. It is perfectly true that the Provisional Order provides for a number of safeguards in the interest of the public, if I may use that expression, and in the public interest, and, as Mr. Will has pointed out, it does provide, before street boxes can be constructed, notice is to be given to the Road Authority, and a notice given to the Postmaster-General. He is also perfectly correct in saying that, so far as notice has to be given to the Road Authority, it is another instance of the kind of protection which accompanies statutory powers to interfere with public rights of passage, public roads and public interests, because at the time of the Gas Works Clauses Act, as he has truly said, you could not lay mains in the street without communicating with the public authority, and those powers have been given to electric lighting companies ; but he says that because you find that the street boxes, I will put it, as far as the argument is concerned, must be practically constructed in accordance with a plan approved of by the Postmaster-General and the Local Authority, that by implication excludes the application of the sections of the Building Act. Upon the broad argument that they must be excluded because you have to obey the directions of those two people seems to me an argument which, to a certain extent, defeats itself, because it might be said that if the two authorities which were contemplated distinctly, namely, the Local Authority and the Postmaster-General, differed, you would have to obey either of them, or if you possibly could, to obey both of them ; but it seems to me that kind of argument loses sight of the real ground for the insertion of these sections. These sections are not inserted because you are to obey one, or to obey the other, but that the persons who have to protect the public interests will have an opportunity to exercise their judgment so far as their interests are concerned, or, in other words, as I ventured to put it in the course of the case, the Postmaster-General was to have notice to see that the telegraph cable and other Post Office rights were not interfered with, and the Road Authority was to have notice in order that it might see that the surface of the road was not interfered with, and not, in their view, rendered dangerous.

That leaves the remaining consideration, whether or not the sections of the London Building Act apply to this case. With regard to the structure itself, it is found by the magistrate that it was a building, structure, or work within the meaning of section 145 and section 72, and I think we are bound by that. But I wish to say that there was ample evidence on which the magistrate could come to the conclusion at which he arrived. This is a chamber underneath the street, in which people can stand. I think it is some 7 or 8 feet or even greater depth, in which there are pipes and mains, so that there is a sort of cellar or chamber, in which this work is carried on, so I have no doubt that is a construction under a public way. That being so, why should not the interest of the person whose duty it is, the District Surveyor, to safeguard those, be protected by notice being given to him ? As was pointed out, questions of footings at a considerable depth, and questions of walls which will support the earth at the sides, are matters which the District Surveyor would have special knowledge of, and which he would have to consider in connection with an ordinary cellar under the footway. To say there is no need for him to consider it because the Postmaster-General will have looked at it from the point of view of the telegraph cables, and the Road Authority will have looked at it from the point of view of the surveyor of the road, only seems to me to lose sight of the reason for the argument that these notices should be given. I think the case is identical, in all material points, with the Whitechapel case. I see no reason for giving effect to the argument that this Provisional Order terminated the matter ; upon this Order itself I see no reason why notice should not be given to the District Surveyor in order that he might have the opportunity of safeguarding the interest which it is his duty to safeguard. I give this decision with regard to the structure in this case, and I do not deal with those cases which Mr. Will says have not yet been brought within the Act, which, for aught I know, may not be structures at all, which may be mere boxes and holes, which have quite a different construction in fact. I therefore come to the conclusion that the decision of the magistrate is right, and that this appeal should be dismissed.

MR. JUSTICE WILLS : I am of the same opinion upon both heads which have been disposed of. As to this being a structure within the meaning of the Act, I cannot see how it is possible to come to any other conclusion, whether you regard it as a question of fact or a question of law.

As to the remaining question, which is the more important one, at first sight the argument of Mr. Will is taking, that inasmuch as under the Provisional Order which has been confirmed and made an Act of Parliament, no work of this kind can be executed except in accordance with the plan which has been approved of by the Postmaster-General and the Local Authority, if the District Surveyor came to a different conclusion with regard to what was necessary and to a conclusion which clashed with that of the Postmaster-General and the Local Authority, there would be a deadlock, and, therefore, it is to be presumed that that is not intended as a possibility contemplated by the Act of Parliament : but legislation of this kind is practical, and practically I should think there would be no sort of difficulty. It may very well be that, from the Postmaster-General's point of view, something which the District Surveyor would be indifferent about may be insisted upon and rightly insisted upon, and it might be that that would clash with the plan which was approved by the District Surveyor. Then what would be the result ? The result would be simply that those who were interested would put their heads together and would hit upon some device which would satisfy all the three authorities, and it is to be observed precisely the same difficulty would arise within the area of the 13th section, sub-section *e*, of the Provisional Order Confirmation Act, because there the one approval which is necessary is not the approval of the Postmaster-General nor the approval of the Local Authority, but it is the joint approval of both. That implies that before the joint approval can be given, these two authorities must agree upon something in common which will protect both the interests they have to look after. It does not seem to me it introduces any practical difficulty that a third authority has to be satisfied also. I can see no reason whatever for distinguishing this case from the case which has already been decided. I am bound to say that, after having carefully considered it, I come to the conclusion that the judgment which was given in the other case was right, and that it was the decision I should have given myself if I had had the same question before me.

MR. JUSTICE CHANNELL : I am of the same opinion. It is clear, beyond any possible doubt, that this was a structure to which the provisions of the 72nd section of the London Building Act would apply if there were nothing to alter them, or take them away. Then you have a subsequent Provisional Order, that has the effect of an Act of Parliament, dealing with the special matter of these boxes. If the provisions of that Order had been inconsistent with the provisions of the other Act, being, in substance, in relation to a special matter, that would have had the effect of supplying *pro tanto*, as far as regards this subject-matter, the provisions of the general Act. But I do not think they are necessarily inconsistent. It has been said that each of these different approving authorities is entitled to have those things put into this box which are necessary for the protection of those interests which it has got to look after. It is not to be supposed that the other people would object to the provisions for the protection of the other authority, although they may not happen to be required for their own purposes, and be things that otherwise would not require to be done. There is no evidence that there would be any difficulty at all.

The appeal was dismissed with costs.

Relaying Drain: Jurisdiction of Sanitary Authority: Cutting through Foundations: District Surveyor entitled to Notice.

DICKSEE *v.* ELSDON.

At Lambeth Police Court, on 26th May, Mr. Hopkins heard a summons taken out by Mr. Bernard Dicksee, District Surveyor for Newington and part of St. George-the-Martyr, Southwark, against Mr. W. C. Elsdon, a builder, of Marlborough Road, Dalston, for having begun to execute a work in respect of which he ought to have served a building notice without having first served such notice.

The defendant was carrying out the reconstruction of a drain at some premises in the Old Kent Road. Mr. Dicksee admitted that in respect to ordinary drainage operations he was not entitled to notice, but he contended that in this case the work came under the provisions of the London Building Act 1894, because in the relaying of the drain it became necessary to cut through the foundations of one of the walls of the building.

The defendant said he had simply taken the old drain out from under the wall and inserted a new one. Under the circumstances he considered that it was not necessary to give notice to the District Surveyor. It was carried out under the direction of the sanitary authorities. He had never heard the question raised before by any District Surveyor in London.

Mr. Dicksee pointed out that the sanitary authorities had only jurisdiction over the drain, and had nothing to do with the building.

The defendant said that hundreds of drains were being relaid daily in London, which more or less necessarily affected the foundations.

Mr. Hopkins: Directly they do, you want the District Surveyor.

.Mr. Hopkins upheld the District Surveyor's contention, and ordered the defendant to pay a nominal penalty of 1*s.* and 12*s.* 6*d.* costs.

Blocks of Flats: One Building: Uniting of Building: London Building Act, s. 77, sub-s. 1.

GOODCHILD *v.* MATTHEWS.

This case, decided by the King's Bench Division on 14th May, turned on the scope of section 77 of the London Building Act 1894. Matthews, the respondent, proposed to erect a number of blocks of flats on a site adjacent to Parliament Hill Fields. Two of the proposed blocks abutted on an old street; the rest were to be on land behind them. The first block was erected without objection. The erection of the second block was objected to on the ground that it was to project beyond the general line of buildings in the street on which it was to abut, but the Tribunal of Appeal under the Act defined the line in a manner which permitted the erection of the buildings on the site proposed. Matthews submitted to the District Surveyor and the County Council a series of plans for covering the site, which were successively objected to as involving the laying out of a new street, without conforming to Part II. of the Act. Finally, while the second block was in course of erection, but before it was roofed in, he submitted a plan showing a series of blocks on the land behind the second block, and an access to each by a covered corridor passing under the second block and running through those to be built on the back land, and showing an access from the staircases of each block to the corridor. No other access to any street or highway was indicated. The County Council objected to the scheme, and Mr. Goodchild, the District Surveyor, served a notice of irregularity under section 150, alleging that the proposed buildings would be a contravention of section 77, sub-section 1, which enacts that buildings shall not be united except where they are wholly in one occupation or are constructed or adapted to be so. Matthews thereupon appealed to a police magistrate. Mr. Plowden, who heard the appeal, decided that the second and other proposed blocks formed one building, and were not separate buildings, and that section 77 applied only to the union of existing buildings and not to such a scheme as proposed by Matthews. From this decision the County Council appealed by case stated. On the hearing of the appeal it was argued for the County Council that the second block was an existing building and that the corridor scheme constituted uniting buildings within section 77, and that the proposed blocks were buildings constructed or adapted to be in different occupations. For Matthews it was argued that the section applied, like section 28 of the Act of 1855, only to buildings existing at the time when uniting was taken in hand; and in support of this argument reliance was placed on *Scott* v. *Legg*, 46 L. J. Rep. M.C. 267; L. R. 10 Q.B.D. 236, decided on the earlier Acts, and on the dicta of Mr. Justice Channell with reference to the construction of section 77 in *Woodthorpe* v. *Spencer*, 63 J.P. 246; 34 L. J. Newsp. 82. The respondent also relied on the magistrate's findings of fact with reference to the nature of the building scheme. The Court decided in favour of the respondent, but gave leave to appeal. The Lord Chief Justice (Lord Alverstone) accepted the findings in fact and law of the magistrate, and intimated as his opinion that the proposed corridor was not uniting the buildings within section 77, which he considered to mean such alterations as are described in sub-sections 2 and 3, which deal mainly with openings in party-walls.

The Lord Chief Justice seems also to have been disposed to accept *Scott* v. *Legg* and *Woodthorpe* v. *Spencer* as correctly deciding that section 77 applies only to the union of existing buildings, and not to union arising from changes of plan during construction.

Reflector Lights hung over Footway: Michael Angelo Taylor's Act.

In *Winsborrow* v. *The London Joint-Stock Bank*, heard on 15th May by the Lord Chief Justice (Lord Alverstone), Mr. Justice Wills, and Mr. Justice Channell, the Westminster City Council sought to obtain a decision that reflector lights hung outside premises on the street side fell within section 65 of Michael Angelo Taylor's Act. That section, amongst other things, makes it an offence to hang out or expose any meat or offal or other matter or thing whatsoever from any house or houses or other buildings or premises, over any part of the pavements or over any area or areas of any houses or other buildings or premises. The Bank set up on their premises in Victoria Street, Westminster, three reflector lights, which hung over the footway to the extent of four feet at a height of fifteen feet above the way, and on notice from the City Council to remove them, they refused to do so, contending that section 65 did not apply on a summons against them for contravening the section. The magistrate found in their favour, subject to a special case; and on the hearing of the case the King's Bench Division held that the quoted part of the enactment only referred to things which might be hung outside a house temporarily and were not fixed to the house; and that the reflectors being permanent structures fixed to the walls did not come within the words of the enactment.

MINUTES. XV.

At a Special General Meeting held Monday, 8th June 1903, at 8 p.m., Mr. Aston Webb, A.R.A., F.S.A., *President*, in the Chair, with 22 Fellows (including 9 members of the Council), and 28 Associates (including two members of the Council), the President having referred to the object of the Meeting as announced in the Notice Paper, moved in accordance therewith, and the Meeting

> RESOLVED, *nem. con.*, that subject to the sanction of the Lords of the Privy Council the words "during the five years from the date of approval of this provision by the Privy Council" be omitted from the proviso of By-law 9.

This terminated the Special General Meeting.

At the Fifteenth General Meeting (Business) of the Session, held at the conclusion of the Special General Meeting above recorded and similarly constituted, the Minutes of the Meeting held 18th May 1903 (p. 400) were taken as read and signed as correct.

The Hon. Secretary announced the decease of Valère Dumortier [*Hon. Corr. M.*, Belgium], and it was resolved that a message of condolence be sent from the Institute to his near relatives.

The following Associates attending for the first time since their election were formally admitted and signed the Register—viz. Ernest Alexander Young, and Alfred Wright Toynton.

The Hon. Secretary called attention to several important works recently added to the Library by donation or purchase, and which were laid upon the table for members' inspection.

The Secretary having read the Reports of the Scrutineers who had supervised the election of the Council and Standing Committees, the candidates reported successful were thereupon taken to be duly elected to the various offices.

Sir William Emerson, *Past President*, having referred with regret to the non-election to the Council of Mr. Edw. A. Gruning [*F.*], moved that the best thanks of the Meeting be accorded to Mr. Gruning for the long and eminent services he had rendered the Institute as a member of the Council, which motion, having been seconded by Mr. J. Douglass Mathews, was carried by acclamation, and briefly responded to by Mr. Gruning.

The President referred in appreciative terms to others whose services the Council had long benefited by and were about to lose, mentioning the names of Messrs. R. Phenè Spiers, F.S.A. [*F.*], W. D. Caröe, M.A., F.S.A. [*F.*], W. M. Fawcett, M.A., F.S.A., *Past Vice-President*, and Paul Waterhouse, M.A. [*F.*].

On the motion of the President a hearty vote of thanks was passed to the Scrutineers * for their arduous labours in connection with the elections.

The Secretary announced that by a resolution of the Council under By-law 20 the following members had ceased to be members of the Royal Institute—viz. Harry William Roberts, *Fellow*, and Edward George Head, *Associate*.

The following candidates for membership in the various classes were elected by show of hands under By-law 9, viz.:—

As FELLOWS (15).

WILLIAM HENRY ATKIN BERRY [*A.* 1879].
BERNARD WILLIAM HURT BRAMELD (Manchester).
WALTER JAMES BURROWS.
EDWARD GUY DAWBER [*A.* 1889].
HORACE FIELD.
JAMES WILLIAM FISHER (Wellingborough).
JOHN GIBBONS (Manchester).
HENRY JONES LANCHESTER [*A.* 1874].
HALLAM CARTER PEGG [*A.* 1896].
REGINALD POPE (Folkestone).
HARRY REDFERN.
HENRY WHITEMAN RISING.
ARTHUR HERON RYAN-TENISON [*A.* 1894].
FRANCIS WILLIAM TASKER [*A.* 1874].
WILLIAM HENRY WHITE [*A.* 1887].

As ASSOCIATES (3).

CEDRIC HEISE BALLANTYNE [*Qualified* in Melbourne 1902] (Melbourne, Victoria).
EDWARD ALBERT JOLLYE [*Qualified* 1888] (Wolverhampton).
ARNOTT WOODROOFE [*Probationer* 1896, *Student* 1898, *Qualified* in Canada 1902] (Vancouver, B.C.).

As HONORARY ASSOCIATES (3).

ALFRED EAST, A.R.A.
THOMAS HAYTON MAWSON.
SOLOMON JOSEPH SOLOMON, A.R.A.

As HON. CORRESPONDING MEMBERS (2).

JEAN LOUIS PASCAL, Member of the Institute of France (Paris).
HEINO SCHMIEDEN, Königl. Baurath, Ordentliches-Mitglied der Königl. Akademie der Bauwesens, Mitglied der Königl. Akademie der Künste (Berlin).

The President, having briefly detailed the negotiations the Institute had had with the Institute of Builders on the question of a Form of Contract which should commend itself to both Bodies, announced that the Builders had at length agreed to accept the Conditions in the Institute Forms of Contract subject to slight alterations which he moved should be adopted—viz.

That Clause 1 of both documents be amended as follows:—

Line 3†: *for* "said" *read* "signed."
Lines 4 and 5: *for* "and instructions in explanation of the same" *read* "instructions, directions, and explanations."
Line 9: *for* "in excess of" *read* "extra to."
Line 12: *for* "excess" *read* "extra."
Bottom line: *for* "excess" *read* "extra."

The motion having been put from the Chair was agreed to without dissent.

The Chairman further moved that the following clause be inserted after Clause 12 in the Form for use where Quantities are part of the Contract:—

> Errors in Bills of Quantities. 12A.—Should any error appear in the Bills of Quantities other than in the Contractor's prices and calculations, it shall be rectified, and such rectification shall constitute a variation of the Contract, and shall be dealt with as hereinafter provided.

Mr. H. Hardwicke Langston [*A.*] moved as an amendment that the clause be referred to the Practice Standing Committee to consider. The amendment, having been seconded by Mr. G. A. T. Middleton [*A.*], was voted upon by show of hands, and declared lost.

The President's motion having been put from the Chair was carried by a large majority.

The proceedings then closed, and the Meeting separated at 9.30 p.m.

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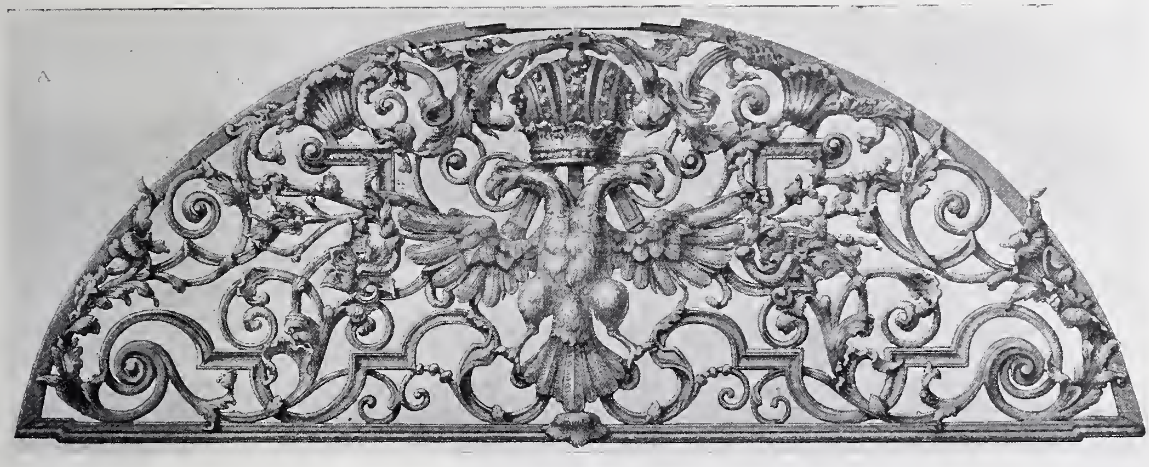
* The names of the Scrutineers are given on page 415.

† The references are to the Form as printed in the current KALENDAR, p. 319.



IRON.—I.

ROYAL ACADEMY LECTURES, 1903.—I.

By Professor Aitchison, R.A.

PAST PRESIDENT, ROYAL GOLD MEDALLIST.

THAT witty ambassador, Sir Henry Wotton, who said that an ambassador was "a good man sent to lie abroad for the good of his country," wrote a treatise on architecture and gave us that now hackneyed proverb that "architecture needs no commendation where there are noble men or noble minds." He was born in 1568, four years after Michelangelo died, when all the civilised world was looking forward to the completion of St. Peter's, when Michelangelo had more or less completed what Bramante proposed—*i.e.* "raised the Pantheon on the vault of the Basilica of Maxentius"; and though we have no such problem now, if we had the wit, we certainly have the material for making something to which "Diana's marvel" would be "a cell."

Before entering on the main subject of my lectures, I should like to say something on architecture without reference to the new materials that we have, and beg of the students to consider what fine architecture does for a country. It gives a stamp to its greatness and glory that nothing else can give, and it shows too that the country is capable of giving birth to genius, and to other high intellectual qualities. If its public buildings are sublime or majestic, that at least shows the skill of those who have worthily carried out the designs of the architect, and the completed building raises those high emotions that are important for everyone to feel. Architecture embodies the cultivation of the people who are contemporary with its building, and is a source of instruction and delight to every person who sees it so long as it lasts; and even its ruins may act like a ferment and leaven a nation which is ready to receive it: so that I hope those who think of following its study may have felt that divine impulse which arises in those who are destined to make discoveries or wondrous improvements, and will strive to the utmost of their powers to rival or surpass former excellence. Let each architect follow Horace's maxim,

> Vos exemplaria Græca
> Nocturna versate manu, versate diurna.
> Horace, *Ars Poetica*, lines 268, 269.

> Do you, my friends, from Greece your models draw,
> And day and night to con them be your law.
> *Sir Theodore Martin's Translation.*

Think of Tennyson studying Hebrew when middle-aged in the hopes of attaining the sublimity of Holy Writ. Think what my early contemporaries have done for England; think of Soane, Wilkins, Cockerell, Barry, and Elmes; think too of what Charles Garnier has done for France in designing the Paris Opera House, which is majestic, original, and purely French.

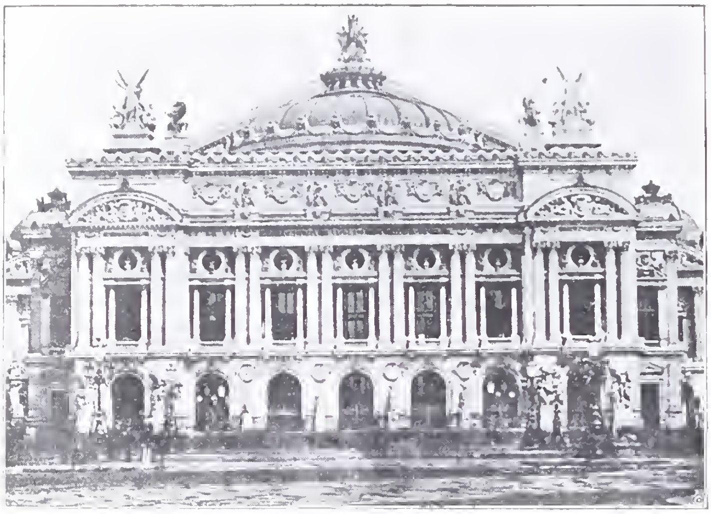


FIG. 1.—THE PARIS OPERA HOUSE.

I will also appeal to those of my hearers who are studying architecture, not to practise it as a trade, but purely as a delight, and to say that one of the great spurs to the exercise of our noble art is the emotions it excites and the hold it takes on the multitude.

What has made us have such a succession of fine poets but the love of poetry among the people, and their admiration for that which best fits the highest aspiration of age? Not long ago I read of the mate of a small merchant vessel who astonished and delighted a literary man travelling in the ship by his knowledge of and admiration for Tennyson. That story of Dante throwing the blacksmith's tools out of doors, because he was singing some of the "Divine Comedy" with wrong words, shows that the very craftsmen admired it enough to learn it. Would any sane man expect music to flourish if the bulk of the people would as soon hear a tin kettle at a dog's tail as the finest piece that the best composer can invent?

The very ruins of fine architecture give us delight. Who has not been struck by the ruins of the Parthenon, of the Erechtheum, and of the Monument of Lysikrates? Renaissance architecture was mainly brought about by the Florentine admiration for the ruins of Rome; the revival of sculpture dates from Niccola Pisano's admiration for a Roman sarcophagus.

We all want to struggle against the degrading of the English character by "the accursed greed of gold," which destroyed Rome, and will destroy us if we cannot stem it. We shall shortly deserve the united sarcasms of Junius: "He recollected that he had a fortune to make, but forgot he had a reputation to lose, and retired to his country house infamous and contented."

Unfortunately we cannot claim that praise that was given by Pericles to the Athenians. "We love the beautiful," but as we do not as a nation, it is all the more necessary that we should avail ourselves of men who can design beautiful and original buildings to keep, with the other artists, the very thought of beauty alive. We see every day the steam engine superseding men and animals where strength or rapidity is wanted: this is so much the case that we may expect shortly to see a steam sparrow to pick up the crumbs, with as little beauty of form as a motor-car, and perhaps as repulsive in other respects.

Nature has created so many things of beauty for the solace and delight of man that it is most unfortunate we should have arrived at such a degraded state that we are insensible to this beneficence. It is most important that by the aid of gifted men we are enabled to confer beauty or sublimity on the buildings that surround us. We can hardly fancy a time when buildings will not be required for man's habitation, for storing his goods, for instruction, and for State, town, and charitable purposes; but if we allow that accursed greed of gold which ruined Rome to banish every desire for beauty, I am afraid we shall sink lower in the scale than the beasts that perish.

The thing that now seems mostly to mark our art is the capability of copying works that have been done before, sometimes with slight variations; but no new form of beauty seems to present itself to the architect, nor to those who design the furniture and fittings for our buildings.

In my last course of lectures I told you that I did not believe that the inventive part of architecture could be taught, and I still think so; but that is all the more reason why we should endeavour to find those people who are blessed with this divine gift of invention; and when I say invention I mean invention in the forms of beauty, dignity, or sublimity, so I have drawn your attention first to the new materials that are banishing all others, and are, if I may say so, crying out to be included in the fine arts, from which hitherto they have been practically excluded.

I treat of *iron* to-night because it is of the first importance for you, the architects of the future, to consider this comparatively new material. We are in the middle of the second iron age: the first iron age, which was really a steel one, was when iron was first used for weapons and armour, and those who had the best weapons conquered those who had only weapons of wood, stone, or bronze. If the first discoverers of iron were able to conquer the then known world by its means, the second great discoverers, the English, have through its aid been able to make more peaceful conquests by means of the steam engine, the railway, and the iron steamboat, and thus to endow mankind with powers only dreamed of by the poets.

Iron in one of its three forms—cast iron, wrought iron, and steel—is now one of the most important building materials we have; but as yet it has hardly been brought into architectural use. I do not recollect ever seeing a cast-iron column, bressummer, or girder that had the absolute perfection of beauty. The great architects of the thirteenth century found brick, stone, and wood used much as they had been by the Romans and Byzantines, and both were great constructors; and though the Romans had not the unerring artistic instincts of the Greeks, they had a capacity for producing splendid and magnificent effects. Architects at least owe them undying gratitude for the great Pantheon, which has not only the greatest masonry dome ever built, but is also absolutely unrivalled as an effective interior. At first it looks like the hot chamber of Agrippa's baths, but it is not, though I think it has been suggested by a Laconicum. Nothing shows the genius of a man more than his seeing some effect and reproducing it on a

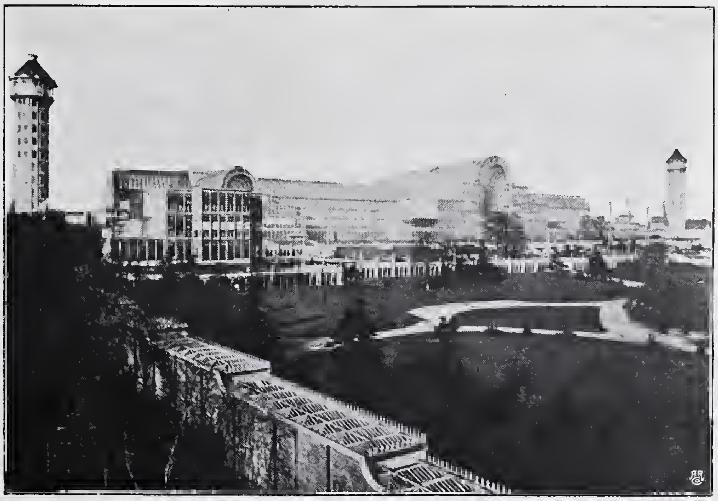


FIG. 2.—THE CRYSTAL PALACE.

grander scale for a more important building, like this dedicated to all the gods. In considering Roman building we must recollect that the Romans had the tribute of a great part of the then known world for their income, armies of slaves for their work, splendid roads and cattle; and though it was then the fashion for writers to deride architecture and architects as some do now—most of you know Martial's epigram:

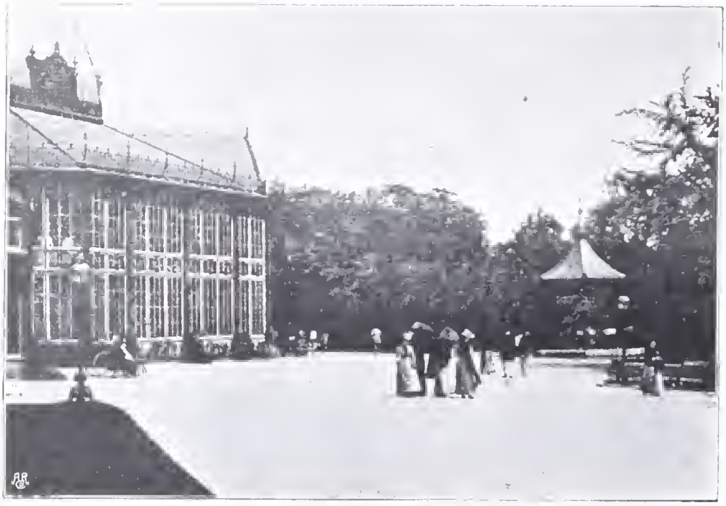


FIG. 3.—BUXTON PAVILION.

> If of dull parts the stripling you suspect
> Make him a herald or an architect—

architecture appears to have then been a lucrative profession, though now it will hardly grow "the grain by which a man may live." We read in Plutarch that Crassus bought Greek slaves and had them brought up as architects and let them out for hire, by which he secured considerable profit. We know how able the Roman architects were, and how the imperial temper of Rome pervaded all classes and made them build for eternity. No expense was spared on foundations, and daring feats of construction were not cramped by expense, though like judicious people the Romans spared expense when they could. It is to be remembered, however, that in all their constructive flights thrust was only counteracted by mass.

The architects of the thirteenth century, the greatest inventors the world has yet seen, had neither the Roman wealth nor the Roman advantages, but the slender resources of alms, the revenues of a bishop, a prince, or a king, and for unskilled labour the serfs of the neighbourhood, but in the case of the king's work skilled workmen were "pressed." The mediæval architects had to trust to their own skill and ingenuity to construct buildings rivalling those of the Romans in extent and sublimity, and absolutely original in form, detail, and ornament. To effect this they revolutionised construction, vaults were no longer made of uniform masses of concrete of great thickness, though in fact late Roman vaults had brick ribs which were dubbed out to make the arrises of the groin points, while in Gothic these groin points were turned into ribs, and the filling in was of extreme thinness where no weight was to be carried; and as thrust could not generally be counteracted by mass it was carried to the ground by means of flying buttresses and pinnacles, and the wide spread base of the last buttress. From the thrust of each bay of vaulting being concentrated in one place the late mediæval architects were able to dispense with almost all their wall space, which was filled with windows. As they were always short of materials they learned the utmost power of resistance in the materials they used, so that in certain cases we are rather reminded of iron than of stone work.

In their carpentry, too, the heavy tie-beam was done away with, and each slender rafter was formed into its own truss. Can we suppose that if such materials as iron and steel had been in their hands as they are in ours, they would not have rivalled our engineers in constructive skill, and at the same time given new forms of beauty to their buildings and enriched them with mouldings and ornament suitable to the material?

It has been too much the fashion with architects to decry our engineers, the true children of the age, whose sole aim is utility; yet looking at their works from the constructive side, what could be more admirable? They have carried their constructive skill in iron to a pitch that even the thirteenth-century architects might envy. No man can walk down the vast nave of the Crystal Palace and see its slight construction and the flood of light it admits without thankfulness and admiration; and if any regret mingles with his emotion it is that the building's tenure of existence is almost as frail as the spider's web it rivals, only it by no means equals the spider's web in beauty, nor does ruined ironwork rival the "silvery gossamers that twinkle into green and gold."

In the present day architecture has fallen upon evil times; it is the voice of one crying in the wilderness, or to a deaf generation, whose deafness is its least infirmity; for if this generation did hear it does not ask for beauty nor want it, and we can do little more than hand down the traditions of architecture unimpaired for the use of succeeding generations. Still no one, and least of all no architect, should shut his eyes to the signs that by slow degrees this insensibility seems likely to pass away, for a faint interest is perhaps being awakened for beauty in buildings.

The position of architecture is not wholly due to outside influences; it is partly due to former architects retiring from the actual strife of the world. Architects a few generations ago were inclined to pose as gentlemen and not as bricklayers; construction was considered as beneath their notice; they only attended to the æsthetic part, so that architecture had come to be looked upon as a sort of potted art, a delicacy for the fastidious, not honest bread and meat for the multitude. Stuart and Revett drew all the Greek temples without any joints in the stone, as if they were cut out of solid rock. W. Burges declined to buy a book of Wren's churches because no jointing of the stones was shown, saying "that at present he could not afford books for the drawing-room table." We must free ourselves from this nonsense; we must strive to be great constructors and do what we can to impart character to our buildings, even if the bestowing upon them the attribute of exquisite beauty is denied us; and without simplicity nothing great can be achieved.

A French writer makes some good remarks on certain views of art. He says:—"Those people, too, are admirable who put art into a sweetmeat box; their grand formula is that art has nothing to do with science, that art and manufacture kill poetry. These imbeciles weep over flowers, as if anyone dreamt of behaving ill to flowers."

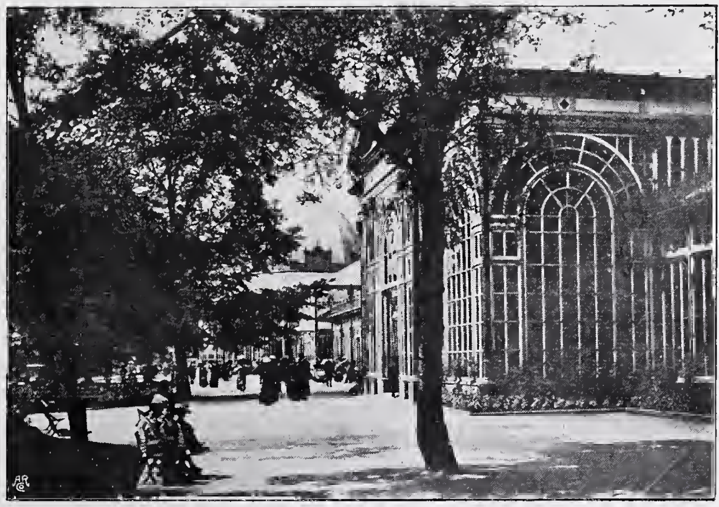


FIG. 4.—BUXTON PAVILION.

It is quite refreshing to find a modern writer mentioning present architecture except to abuse it. Notices of architecture by novelists used to be limited to Greek; then there was admiration for Gothic—the description of Mr. Allworthy's house in *Tom Jones* points to this: "The Gothic style of building could produce nothing nobler than Mr. Allworthy's house.

There was an air of grandeur in it that struck you with awe and rivalled the beauties of the best Grecian architecture, and it was as commodious within as venerable without." (*Tom Jones*, by Henry Fielding, London, 1749.)

Then we had a modified admiration of Elizabethan hodge-podge, and now we have got down to Queen Anne and lower; but these admirations are all tinged with a love for old things. No one seems to have any admiration for architecture itself, no emotion is caused by the elegance, proportion, or sublimity of buildings of the present day. Neither vastness nor floods of light nor depths of shadow nor beautiful colour nor elegant ornament affect them. The people of to-day are emotionless; they are as little affected by the daring construction of the engineers as by the beauty and sublimity of architecture. How many thousands of people who have travelled to Scotland by the night mail have seen the bridge of Berwick-on-Tweed by moonlight? And yet I never saw its beauty once mentioned in print. At the distance of the railway and by moonlight it is almost perfect—I think it is an example of how the true sometimes by accident coincides with the beautiful. Yet it is the casual mention by a great writer or a poet of something that has struck him as beautiful or picturesque that is so valuable as an evidence of the observation of architecture and the emotions it excites, as in Sir Walter Scott's description of Melrose Abbey.

We must now consider the materials with which we have to deal. Cast iron, wrought iron, and steel, these are perfect materials, for, with the exception of the glazing, the whole structure may be made of each one of them. But one material rather than another may be more proper and more economical. Let us take cast iron first and deal with its capabilities, its peculiarities, and its defects. It can be cast into almost any form we please and enriched with almost any ornament that is not undercut; we may have columns of almost any variety of section, and each of their parts may be either plain or ornamental. Cast iron is very strong in compression as compared with other materials, and consequently takes up little space; so it lends itself peculiarly to what we may call the bony structure of a building. Its defects are that it rapidly transmits heat, so that in damp weather horizontal pieces drip and vertical pieces stream with water; it melts in great heat, and if heated to redness and rapidly cooled by cold water it cracks or breaks. Its contraction and expansion under variations of temperature are considerable, and the contraction or expansion is sometimes dangerous, and it rapidly rusts. Iron is difficult to cast in very long pieces; it is so hard that ornament cannot well be chased after casting. Its peculiarities are that it is very heavy, that it is roughly six times as strong in compression as in tension, and unless its parts are of nearly uniform thickness the casting tears on cooling, so that in the case of girders where the lower flange must contain six times the amount of iron that the upper one does, it is not easy to arrange the parts so that they do not tear in cooling. Everything has to be arranged beforehand, even to a bolt-hole, for the expense of drilling is considerable. Accurate patterns in wood, plaster, or metal have to be made for each piece; consequently there is a strong desire to save the cost of patterns, and due allowance must be made for shrinkage in cooling.

Wrought Iron was in my young days made by remelting cast-iron pigs, pouring the fluid iron out on to a level bed and pouring cold water on it, breaking it up with sledge hammers and putting the pieces so broken into a puddling furnace; that part of the iron which did not melt was collected into a ball on the puddlers' bar and put under the tilt hammer and then drawn into rods, bars, or T, L, or H, iron.

Steel is defined as thus differing from malleable iron, that when heated red hot and suddenly cooled it becomes hardened, and more or less brittle and elastic: of it are made weapons, tools, and springs, and the processes applied are called *hardening* or *tempering*.

Some of the capabilities of wrought iron are smaller than those of cast iron, but its tensile strength is much greater. The tensile strength of wrought iron is about 3½ times as great as cast, and in steel five or six times as great; both wrought iron and steel can be rolled into very thin plates, and these plates can be riveted together so as to be of any length. The defects of wrought iron and steel are in many respects much the same as those of cast iron, except that they rust more readily, and though they will not melt under the influence of great heat they crumple up like a sheet of wet paper, and it is very difficult to impress any ornament upon them, whether raised or sunk, except at great cost; but they can, at a comparatively reasonable expense, be pierced. The peculiarities of wrought iron and steel are that they can be built up, that is, riveted together into the required forms, from plates, tubes, bars, from L, T, H, and U pieces.

When marble, stone, or wood is used in cross strain it is generally more convenient and less costly to use them in their native square or oblong sections, but this is not the case with iron. It is both a heavy and a costly material, and we neither want to load the building with useless weight nor to throw away money on useless material.

The form of equal strength in cross strain for a uniform load is parabolic, but if the top of a bressummer is to be level then the flange takes a double parabolic shape on plan.

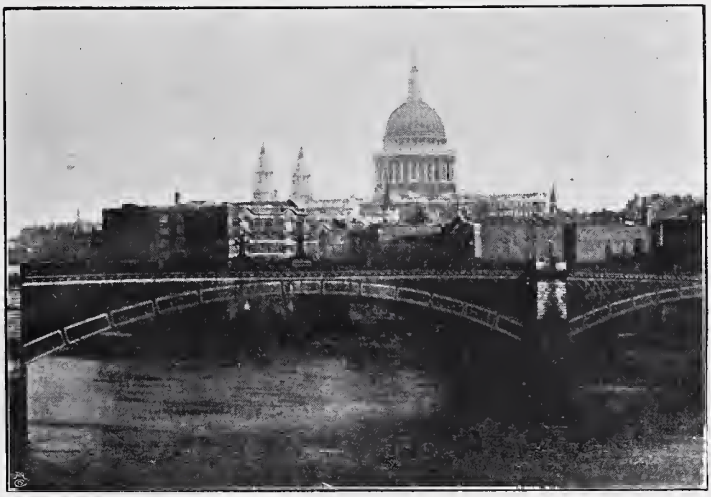


FIG. 5.—SOUTHWARK BRIDGE.

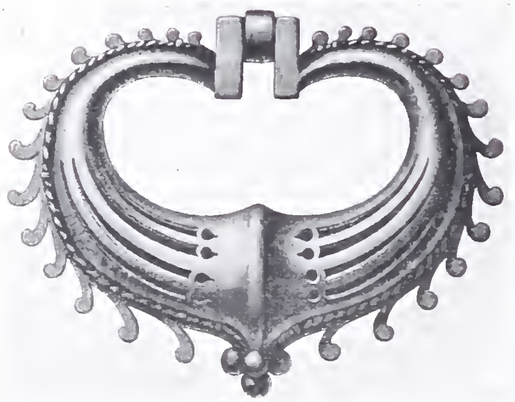
You remember that cast iron is six times stronger in compression than in tension, and that large variation in thickness is apt to cause breaking as the molten metal cools, and we can rarely core the lower flange of a girder. Hence there is ample scope for your ingenuity in trying to make a girder sightly. In columns every considerable swelling out or projection, as for capitals, bases, or the lower parts of shafts, is a source of weakness and danger, instead of being an additional strength. All incised work is an element of weakness. I have often seen the brackets supporting heavily loaded capitals break when the founder has put his name or initial in sunk letters, and if very high relief is wanted in capitals cast on to columns their ornaments generally have to be screwed on.

I make no apology for treating of the natural qualities of the materials, for without knowing these it is impossible for you to design with either safety or propriety. Architects are before everything constructors; architects without any constructive knowledge are even worse than sculptors without anatomy; for defects of anatomy in sculpture if we are anatomists only make us shrug our shoulders and laugh, while the ignorance of the architect may ruin us. Want of a thorough knowledge of the properties of iron and of the abstruse statical problems connected with its use has made it so little used by architects, for two minds cannot act like one, and the scientific mind of the engineer with no art and the artistic mind of the architect with no science are apt when working together to be like two horses pulling in opposite directions.

You must observe that the use of iron has restored the post and lintel construction, which had been swept away by the arches, domes, and vaults of Roman, Byzantine, and Mediæval times. It is not that arches or domes cannot be made, but where there is no abutment the ribs must either be girders without thrust or be trussed or tied.

From the great strength of cast iron in compression, the proportion of voids to solids is so great, that it is unpleasant, to the eye accustomed to the large supports that are required in brick, stone, or marble, and also to the small spaces that can be bridged by these materials in the form of lintels. In proportioning the parts of columns our module must be very different from the half diameter of the bottom of the shaft, for cast iron columns are not from six to eight diameters in height, but from twenty-five to thirty or even more. If we must go to old-world ornament we must study from the bronze tripods and candelabra of the Greeks or Romans, and from those fantastic structures found in the arabesque paintings of Rome and Pompeii which so excited the indignation of Vitruvius. Iron, however, is absolutely untrammelled by any former scheme of design or ornament except for arms or armour, so that you may be as original as you like without contravening any established law; but as the faculty of invention is the last thing to be met with in the present day, instead of it being an advantage to be untrammelled, it is a great hindrance to those whose only skill is in making slight divergences from the things that have already been done.

It might have been an advantage to the late Saracens and early Mediævals, who seem to have been replete with original invention; but this is by no means a characteristic of the present day; in fact I heard a very clever architect say that if original invention was wanted you would have to wait till there was another irruption of barbarians. It is no use lamenting that the bulk of the present races of civilised man are not endowed with certain qualities, when we have no means of creating these qualities; the utmost we can do is to give those who have these qualities an opportunity for exercising them, and to beg of them to strive to give us beautiful and appropriate forms for ironwork.



THE ROYAL GOLD MEDAL.

Presentation to Mr. Charles Follen McKim, of New York, 22nd June 1903.

ADDRESS BY MR. ASTON WEBB, R.A., PRESIDENT.

Your Excellency, Ladies, and Gentlemen,—

As you all know, we are met together to-night to present the Royal Gold Medal for the promotion of architecture, annually given by His Majesty the King to "some distinguished architect or man of science or letters who has designed or executed a building of high merit, or produced a work tending to promote or facilitate the knowledge of architecture or the various branches of science connected therewith."

The mode of selection is that a name is brought forward by the Council and submitted to the general body of members of this Institute, after which it is submitted to the King for his gracious approval.

Amongst those to whom the Medal has been awarded, and who are now no longer amongst us, are Professor Cockerell, the first recipient in 1848; Sir Charles Barry; Owen Jones; Sir Gilbert Scott; Viollet-le-Duc; Sir James Pennethorne; George Edmund Street; John Pearson; Baron von Ferstel; F. C. Penrose; H. Schliemann; Charles Garnier; Baron von Hansen; R. M. Hunt; Lord Leighton.

In selecting a recipient for this honour it has almost become an unwritten rule to select in rotation an English architect, a foreign architect, and a literary man with architectural instincts. This year we have somewhat departed from this rule, and, as you know, our Institute has selected Mr. Charles Follen McKim, of New York, and Mr. McKim has returned us the compliment by crossing the Atlantic especially to receive the Medal in person to-night; and here he is, I am glad to say, safe and sound with us this evening, and very heartily we all welcome him.

I have said that in selecting Mr. McKim we have somewhat departed from our rule, for we cannot claim him as an English architect, we have not selected him for his literary attainments, and least of all can we consider him as a *foreign* architect. No, we have selected him as a highly distinguished American architect, a very near relation of ours, and a representative man, in order that we may show to him personally and to the whole world of American artists our high appreciation and admiration of the great work that marvellous country is doing on the other side of the world: an appreciation not only of what they are doing, but also of what we expect them to do untrammelled by traditions, full of youth, energy, imagination and initiative, and supported by almost boundless resources; and we are confident that as time goes on they will not only develop fresh types and plans of buildings, but that they will, though still mindful of the past, clothe those buildings in a language that will be distinctly their own.

As I have already said, this selection has met with the full approval of His Majesty the King; and I venture to hope the presence here to-night of the Ambassador himself from the American people to our Court may be taken as setting the American seal on this selection of ours.

And now I must introduce you to Mr. McKim a little more in detail, in order that not only those present, but also those who read these proceedings, may fully understand our choice. I may say my facts may be depended upon, for I have received them from the best authority—Mr. McKim himself.

He was born in Chester Co., Pennsylvania, five-and-fifty years ago, and at eighteen entered Harvard University with a view to becoming a mining engineer. A year later, finding the work uncongenial, he entered the office of Mr. Russell Sturgis, architect, of New York, and, in the autumn of the same year, the Atelier Daumet in Paris, where he was prepared for, and admitted to, the École des Beaux Arts, remaining till the outbreak of the war some three years later. During this time Mr. McKim also travelled in Europe, and visited England in 1869, where, he tells me, through the kindness of Mr. Phené Spiers, Mr. Florence, and others, he was able to make profitable use of his time, as far as cricket matches would permit. He also was made an Honorary Member of the Architectural Association.

Returning to New York in 1870, Mr. McKim entered the office of the well-known architect H. H. Richardson; and in 1872, at the age of twenty-five, commenced practice on his own account, being joined in 1877 by Mr. Wm. Rutherford Mead, and in 1879 by Mr. Stanford White, and since that time they have continued their practice as "McKim, Mead, and White."

Many commissions followed, and a list of the buildings will appear in the Journal.[*]

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[*] The following is a complete list :—

1879–1893.

Casino at Newport, Rhode Island.
House of Louis C. Tiffany, Esq., New York.
Houses of Henry Villard, Esq., New York.
The *Judge* Building, New York.
The Imperial Hotel, New York.
House of the Hon. John A. Andrew, Boston, Massachusetts.
The Algonquin Club, Boston, Massachusetts.
The Public Library, Boston, Massachusetts.
Country House of Mrs. William Edgar, Newport, Rhode Island.
The Freundschaft Club, New York.
The New York Life Insurance Company's Buildings at Kansas City, Missouri, Omaha, Nebraska, and New York.
Country House of C. J. Osborn, Esq., Mamaroneck, New York.
Country House of Colonel Elliott F. Shepard, Scarborough, New York.
St. Peter's Church, Morristown, New Jersey.
House of General Charles A. Whittier, Boston, Massachusetts.
House of F. I. Amory, Esq., Boston, Massachusetts.
House of the Hon. Richard Olney, Boston, Massachusetts.
Deutscher Verein, New York.
First Methodist Episcopal Church, Baltimore, Maryland.
Judson Memorial Church, New York.
Country Houses of E. D. Morgan, Esq., at Newport, Rhode Island, and Wheatly Hills, Long Island.
House of the Hon. J. Hampden Robb, New York.
Power House and Office Building of the Broadway Cable Railway, New York.
The Bowery Savings Bank, New York.
The Century Club, New York.
The Power House of the Niagara Cataract Company, Niagara Falls, New York.
The Germantown Cricket Club, Philadelphia, Pennsylvania.
The Metropolitan Club, New York.
Country House of H. McK. Twombley, Esq., Madison, New Jersey.
Office Building of Messrs. Cornelius and W. K. Vanderbilt, New York.
The Washington Memorial Arch, New York.
The West Point Battle Monument, West Point, New York.
The Walker Memorial Library, Bowdoin College, Brunswick, Maine.
The Public Library, Naugatuck, Connecticut.

1893–1903.

The Agricultural Building and New York State Building at the World's Columbian Exposition, Chicago, Illinois.
Building of the *New York Herald*, New York.
Museum Building of the Brooklyn Institute of Arts and Sciences, Brooklyn, New York.
The Columbia University, New York.
The University of Virginia, Charlottesville, Virginia.
The University of the City of New York, New York.
Radcliffe College, Harvard University, Boston, Massachusetts.
Building of the Medical Department of Cornell University, New York.
Building of the Architectural Department, Harvard University, Cambridge, Massachusetts.
The Harvard Union, Cambridge, Massachusetts.
Campus Fence and Gates, Harvard University, Cambridge, Massachusetts.
The Harvard Club, New York.

In 1887 Messrs. McKim, Mead, and White were appointed architects to the new public library of the City of Boston, now a famous building. In 1889 two Fellowships in the School of Architecture, Columbia University, known as the McKim Fellowships, were established. In 1891 Mr. McKim was made a member of Commission of ten architects from throughout the United States to design the World's Columbian Exposition at Chicago. In 1894 his firm were appointed architects to the new Capitol building of the State of Rhode Island. In 1897 the American Academy of Architecture in Rome was incorporated under the laws of the State of New York, and Mr. McKim was made President. In 1899 he was elected a member of the Academy of San Luca, and in the same year was appointed to serve as a member of the first Municipal Art Commission of the City of New York.

In 1901 Mr. McKim was appointed a member of the Park Commission for the improvement of the park system of the District of Columbia, and assisted in drawing up the magnificent scheme, photographs of which are exhibited here to-night. Here is to be an avenue 1,600 feet wide and a mile and a half long, architecturally treated at various points, with great public buildings incorporated in the scheme. The cost is put at some three to four millions, some half of which has already been voted. A Bill has also passed Congress for locating the memorial.

Mr. McKim was elected President of the American Institute of Architects in 1901, and re-elected in 1902, and in the same year was appointed by President Roosevelt to restore the White House, and also as architect for the new Army War College.

Of the buildings erected some idea may be gained from the splendid series of photographs and drawings Mr. McKim has kindly shown us here to-night. He seems equally at home with a palace or a bungalow, with a university or a railway station, with laying out a great park scheme or arranging a charming little formal garden. In all I think you will find true artistic feeling, nobility of plan, breadth of treatment, absence of unnecessary or meretricious ornament, and a suitability of purpose. The style, based largely on Italian examples, shows the influence of French training, and while founded on traditional lines appears to me to possess just that amount of individuality required, without which the best work must be dull and uninteresting.

Then, again, Mr. McKim has set all us architects an example by the opportunities he has given to painters and sculptors to further adorn his works. The decorations of the Boston

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The University Club, New York.
The Capitol of the State of Rhode Island, Providence, Rhode Island.
Symphony Hall, Boston, Massachusetts.
The Cullom Memorial Building, West Point, New York.
The Public Library, Orange, New Jersey.
The First Congregational Church, Naugatuck, Connecticut.
The Detroit Savings Bank, Detroit, Michigan.
The Carnegie Branch Libraries, New York.
House of George A. Nickerson, Esq., Boston, Massachusetts.
Country House of Herman Oelrichs, Esq., Newport, Rhode Island.
House of Thomas Nelson Page, Esq., Washington, D.C.
Country House of Frederick W. Vanderbilt, Esq., Hyde Park, New York.
Country House of Odgen Mills, Esq., Staatsburg, New York.
House of the Honourable Levi P. Morton, New York.
House of Joseph Pulitzer, Esq., New York.
House of R. W. Patterson, Esq., Washington, D.C.
Country House of Clarence H. Mackay, Esq., Roslyn, Long Island.
Country House of the Honourable William C. Whitney, Roslyn, Long Island.
Town House of the Honourable William C. Whitney, New York.
The White House (Executive Mansion), Washington, D.C.—Restoration.

Now in Course of Construction.

The Bank of Montreal, Montreal, Province of Quebec, Canada.
The New York Terminal Station, Pennsylvania Railroad.
Library Building for J. Pierpont Morgan, Esq., New York.
The Army War College and Engineers School, and Washington Barracks, Washington, D.C.
The New Bellevue Hospital, New York.
Building for the Gorham Company, Silversmiths, New York.
Building for Tiffany & Company, Jewellers, New York.
Building for The Knickerbocker Trust Company, New York.
Officers' Mess Hall and Quarters, West Point, New York.
The Harmonie Club, New York.
House for James Stillman, Esq., New York.
House for L. C. Hanna, Esq., Cleveland, Ohio.
House for T. B. Wanamaker, Esq., Philadelphia, Pennsylvania.

Library by Mr. E. A. Abbey, who I am glad to say is here to-night, and by Mr. Sargent, who would have liked to have been here but is still abroad, is a case in point, and are well illustrated by the photographs here.

And now, Mr. McKim, it only remains for me to present you with this Medal as an English token of our admiration and esteem of yourself and your colleagues. May you long live to adorn your country still further with your works!

MR. McKIM'S RESPONSE.

Mr. President, Your Excellency, Ladies, and Gentlemen,—

I AM no speaker, and if I were it would be quite beyond me adequately to express to you my appreciation and deep sense of obligation to His Gracious Majesty King Edward and to the members of this Royal Institute of British Architects.

The broad philanthropy which created this Medal, not alone for British subjects, but that it might help and encourage the successful development of the art of Architecture in other countries, was characteristic of the most gracious Queen whose memory we, next to you, hold in veneration. That it should have a second time within a single decade come to our shores is indeed cause for felicitation, since it attests, in lasting form, the progress and achievement your eminent body has been pleased to recognise in the work of your younger colleagues in America.

The Medal which you do me the high honour to bestow on me, is pure at least in virtue of my accidental Presidency of the American Institute, but is, I feel, to be regarded in a far larger sense than as a personal recognition of the ties which unite the builder's art on both sides of the Atlantic. As a spur and incentive, and as a token of the friendship and respect that for many years have been growing up between our two bodies, I accept with grateful pride this Medal, tendered as to my countrymen by the Royal Institute. I accept it for the whole profession in the United States, and I accept it for my associates of twenty-five years to whom I owe everything.

As the bearer of many messages from across the seas, I cannot let such an occasion as this pass by without at least briefly adverting to the ties which have united us in the past, and which must render the development of our future of something more than passing interest to you. I will add also a word concerning recent events on our side of the water.

The early buildings of the New England coast, dating back to the eighteenth century, and more rarely to the seventeenth, from the once vice-regal town of Portsmouth, to Charleston, S.C., have happily descended to us despite political revolutions. Notwithstanding their simpler forms, both of construction and design, made necessary by slender means and the circumstances of transplantation, they still reflect the mother country in their excellence of construction as well as in sound and correct taste. Precisely the most interesting, and in their sphere the most admirable, architectural monuments of my native land, private dwellings and public buildings alike, are those that most strongly recall their English prototypes.

Our obligations, for instance, to Sir Christopher Wren are very imperfectly understood even at home, yet the cities of the Atlantic seaboard, especially in New England, abound in examples showing the influence of his school. The struggle of these landmarks for existence in the advancing tide of commercial prosperity, before which they are gradually being swept away, is a melancholy daily spectacle—not alone deplorable in the loss of historic monuments, but for the lessons they invariably teach of sound proportion, simplicity, and good manners.

Happily some of the best examples remain to us. At the seat of Government, for instance, our Capitol, and the home of the President, the White House, are both singularly animated by a pure taste and devoted love of beauty, not to mention the City Hall and the old Department buildings of the city of Washington. Of these, for our information at home, as well as yours, let us gratefully acknowledge that the Capitol, though enlarged and changed since, was originally designed by one William Thornton, the White House by a certain James Hoban, while the City Hall and old Department buildings were the creation of a man of the name of Hadfield—*all Englishmen !*

I can well remember the thrill of surprise and pleasure which I experienced on my first visit to England, more than thirty years ago, in the discovery of a strange familiarity in the appearance of things, and in the sense of not being after all so far from home. Though I did not understand it then, the reason, as has been shown, was not far to seek !

I will venture to refer to one more building, of the era which we call early and you ingloriously late, albeit of the period of Adam—the Octagon.

Our Institute, which has urged upon Governments—national, state, and municipal—the duty of preserving Historic Monuments, has itself recently secured possession of one of the historic houses of America, known from its shape as the "Octagon," and designed by the same William Thornton, architect of the Capitol. Here in the early days was dispensed a liberal hospitality by President Madison, whose home it was. Under its roof, too, the Treaty of Ghent was signed. The house was finished in a manner befitting its importance, and to-day is in an excellent state of preservation. Thus the expressed desire and often recurring efforts of the Institute to secure for itself a permanent home has been accomplished after nearly half a century of existence. May it typify to those who assemble in it, as well as to the people of the City of Washington, the spirit of public service !

The Institute has ample reason for felicitation in both the increase and betterment of our own schools of architecture, in Harvard, Columbia, Penna, Cornell, and Chicago Universities, as well as in the admirable and still older foundation of the Institute of Technology in Boston. The movement to endow an American Academy of Fine Arts in Rome on the general lines of the French Academy in the Villa Medicis is not new. Till now dependent for support upon the insufficient means at the command of the incorporators (members of the Institute), the number of scholars has of necessity been small, and the conveniences for work not such as would be afforded by an older, well-equipped, and well-endowed institution.

Nevertheless, in spite of its vicissitudes, such has been the quality of the work and men turned out, so strong the conviction of those most deeply interested in the need for an institution offering a post-graduate course intended only for those who shall be already technically well equipped, that a bill for the incorporation of the American Academy in Rome by Act of Congress, and asking the protection of the United States Government, was introduced in 1901 by the late Senator McMillan. The persons named as incorporators, besides the leading architects, painters, and sculptors, include the great universities and technical schools, represented by their presidents, the Secretaries of State and War, the Librarian of Congress, the Government architect, and a considerable number of names of men chosen from the community at large known for their interest in art and art education.

This bill passed the Senate, and was favourably reported to the House ; but owing to the legislative conditions prevailing in the latter body during the closing weeks of the session, it failed to become law. I am happy to say that it will be reintroduced in the coming fifty-eighth Congress and is considered to have every prospect of success.

Indeed we seem to be living in a new age, not only in our private enterprises, but in our relations with the Government. It was no small thing that a committee of the United States

Senate, under the leadership of the deeply mourned Senator McMillan, called into consultation, officially, the Institute and accepted the advice of its Committee in the formation of a commission to prepare plans for the improvement of the park system of the district of Columbia, including the location of public buildings.

Following this lead have come frequent requests from Government officials on the various and often perplexing problems of their departments, so that, informally and unofficially, there has come to pass a seeking for expert advice as gratifying as it has been unusual.

The forces which have brought about plans for the improvement of the National Capital are acting throughout the land. Not only in the Atlantic seaboard city of New York and the cities of the lake region, like Buffalo, Cleveland, and St. Paul, but even from far away Seattle, on the Pacific Coast, comes the news of attempts to treat the city as a unit and to develop a municipality as a consistent work of art.

It is worthy of note also that as the star of progress takes its western way, the effort at improvement is made with increasing vigour in both enthusiasm and money.

As evidence of the times, and amongst the measures voted by the last (fifty-seventh) Congress for new buildings to be erected within the district of Columbia alone, I will quote the substance of a single paragraph from the Report of the Senate Commission of the District of Columbia, dated 14th March 1903:—

"The fifty-seventh Congress, besides the restoration of the White House, authorised the construction of the Army War College and the Engineer School of Application; a building for the National Museum . . . .; the Union Railroad Station; (an office) building for the use of the members of the House of Representatives; a Municipal Building for the district of Columbia, and a Hall of Records." The cost of these buildings completed will approximate to not less than fifteen millions of dollars, or over three millions sterling.

I cannot close even these brief remarks without an expression of appreciation for one to whom your eminent body so recently did honour. After nearly half a century of successful endeavour, during which Mr. Hunt held aloft the banner and fought the battles of the Institute, and in the fulness of his powers, at a time when his influence was greatest, he was suddenly taken away.

Ladies and Gentlemen, I have to thank you for the great patience and forbearance with which you have listened to these fragmentary remarks that but poorly express my appreciation of the great honour which you have seen fit to confer upon me.

His Excellency the Hon. JOSEPH H. CHOATE, the American Ambassador, who rose at the invitation of the President, said that he stood before the meeting in a three-fold capacity—first, and he thought most important, as the personal friend of Mr. McKim; secondly, as a Harvard man, representing the University that was so proud of him [*applause*]; and, thirdly, as the official representative of his country, upon which, in honouring him, the Institute had conferred a lasting and highly appreciated honour [*applause*]. He knew how dangerous it was for a layman to appear and say a word before a company of distinguished men of a profession to which he did not belong, but he believed that in either of those three capacities he could say a word without encountering that technical criticism which naturally fell from the minds, if not from the lips, of the learned upon one who was emphatically ignorant. It had been his good fortune to know Mr. McKim from boyhood—from Mr. McKim's boyhood, he was sorry to say, not from his own—and he thought it was not exaggerating the estimate of his friends, in view of his whole-souled devotion to the art which he pursued, of the sweetness and simplicity of his character, and of his enthusiasm from the beginning for the profession which he had so highly honoured, if he said that from the beginning they all expected, from thirty years ago until the present time, that he would receive, if not this particular Medal, the highest honour that his professional brethren throughout the world could confer upon him. [*Applause.*] And then as a Harvard man he rejoiced in being present that evening. They doubtless knew that Harvard bore the same relation to American life that Oxford did to the life of Great Britain, and Harvard was particularly proud of this son whom the Institute had selected for this high distinction. Harvard had already conferred upon him one of her honorary degrees, and he believed that the day was not far distant when she would again select him for conferring upon him the highest degree that was known to her records. Then, as representative of his country, he had no hesitation in saying that if they had put to the vote of the whole American people, who among her distinguished sons was most worthy of the honour they had conferred that evening, by a practically unanimous vote they would have selected Charles F. McKim; and if they had called for the vote of the Congress of the United States, as representing the power and judgment of the whole community, they too would have selected him, because with their approval he had been selected and had taken an important part in that commission—a Presidential commission, it was true, corresponding very much to what would here be called a Royal Commission—in the restoration and laying out of the city of Washington—the development of the city of Washington upon the lines and according to the plan that received the approval of the father of his country, George Washington, more than a hundred years ago. Not only their capital city, but their Republican palace, the White House—simple, wholly unambitious, not venturing to compete with any of the palaces of the Old World, but the home of their President, to which every ingenuous American boy was taught to look forward as his ultimate home [*laughter*]—not only the White House, but the city itself had been laid out upon more generous plans by the father of his country than the mistake, should he say, of subsequent generations had allowed to be developed; and it was thought a few years ago that it would be wise to select a commission of competent architects to see whether the original plan of Washington could not be again brought to life and restored and put in practical operation, both in regard to the White House and in regard to the city of Washington itself; and it was no secret that to the genius of Mr. McKim and his associates on that commission was to be ascribed the success of their study, which had resulted in a complete restoration both of their Republican palace, and of the city of which they were all so proud. If it had been put to the appointment of the President—who might take the place of His Gracious Majesty the King in the selection of an American architect—he knew that the President, from his lifelong friendship and hearty sympathy with Mr. McKim in all the successive and increasing incidents of his career, would have joined in the approval of his selection for this honour. [*Applause.*] It was his good fortune to know Mr. Richard M. Hunt, whom ten years ago the Royal Institute of British Architects honoured in the same way, and he thought he might say of both those gentlemen that in that immense development of their art which had taken place in the United States during the last thirty years, both of those gentlemen were entitled to a very great share of the credit. After the Civil War was over, and it was at last established for once and for ever that the United States was to be a nation for ever, one and inseparable, an indestructible union of indestructible States, there grew up throughout the length and breadth of the land an ambition to improve, to adorn, to glorify its buildings, both public and private, in all quarters of the realm; and, as Mr. McKim had said in his admirable address, from Boston on the shores of the Atlantic to Seattle on the shores of the Pacific, this purpose of acquiring, of having and living in buildings equally remarkable for their beauty as for their utility, and for having their public buildings worthy of the municipalities and of the country, and of the great wealth and power that they represented, had been a universal sentiment, and the result was that America had been, was now, and was likely to be in the future, a perfect Paradise of architects! [*Laughter and applause.*] Then there had grown up not only, he might say, one school of architecture, but many schools of architecture connected with their great universities, and they were sending forth year by year large numbers of young men highly qualified for the pursuit of this noble profession. These young men were following in the footsteps of Hunt and McKim, upon whom the Institute had conferred this highly honourable and distinguishing Medal, and, if he was not mistaken, the result would be that they would have added to their fraternity of architects—for he believed they were one great fraternity throughout the world [*hear, hear, and applause*]—a noble contribution from the United States, of whom, as he believed, as of the recipient of this honour that evening, they would all have reason to be proud. (*Loud applause.*)

Sir LAWRENCE ALMA-TADEMA [*H.A.*], asked by the President to say a few words, said that he welcomed Mr. McKim because he felt that he was more or less one of themselves. In the Royal Academy, from time immemorial, in selecting the works of art for their annual exhibitions, they had two standards, one standard for the English fine art, and one standard for the foreign. They were more lenient to the home artists, perhaps; that was only natural. Since time immemorial also (continued Sir Lawrence) the works sent in by Americans went with ours. We had always believed that they belonged to us and that we belonged to them—[*hear, hear*]—that we were one great fraternity. He (the speaker) had been reproached that he had never been to America, and indeed he reproached himself; but one could not do everything. He should like very much to know more intimately the many friends of his art he knew he had on the other side of the Atlantic. He should see among them, he was sure, things that would interest him deeply. A friend once said to him, "If you want to write a history of the art of the nineteenth century, you cannot do it without going to America." This was especially true, perhaps, as regards architecture. The Americans had developed a taste in architecture which he should have liked to make personal acquaintance with. He had seen photographs, and drawings, and plans, and elevations; but, as it seemed to him, in all those representations the soul was still a little wanting. Therefore it was by proxy, as it were, that he admired Mr. McKim's art. But he was quite assured by what his Excellency had told them that, as they had unanimously awarded him the Royal Gold Medal, the same would have been done equally unanimously on the other side of the Atlantic. It formed one tie the more amongst friends who loved one another well, and who did so well to tie the bow of art as tight as they could.

The President invited Mr. Abbey to speak, as he had an intimate acquaintance with Mr. McKim's work, and had also had some share in its adornment.

Mr. E. A. Abbey, R.A., said he was not accustomed to public speaking; he had endeavoured to express himself as well as he could in another way. But when a man to whom he owed as much as he did to Mr. McKim was the recipient of such an honour as this, he felt that he could not refuse to say something in recognition of what not only he owed to Mr. McKim, but what the great body of artists who were working on certain lines owed to him in America, and he hoped would owe to him in other places as well. Mr. McKim and the President had touched in a very slight way upon the great scheme of the American School in Rome. This scheme seemed to him to be the beginning of a Renaissance—of the wedding, he might say, of the arts of painting, sculpture, and architecture, which in his opinion had been separated too long. This school in Rome, which owed so much to Mr. McKim's energy and devotion, was one which he hoped they should see English students going to as a sort of Mecca, a university of combined arts which would once more be brought together. He had been very glad to be present and to testify to Mr. McKim's devotion and to his warm friendship through many very trying days.

The President said there was only one further request that they should like to make to Mr. McKim. When he went back to America they should lose him, and would not have the advantage of having him among them from time to time. But he knew it would be the wish of everyone that Mr. McKim should become one of their Honorary Corresponding Members so that they might hear from him from time to time what was being done on the other side of the Atlantic. He trusted Mr. McKim would consent to become an Honorary Corresponding Member.

Mr. McKim, in assenting, said he felt deeply grateful for the honour of being associated with the Institute even so remotely as, he was sorry to say, it must necessarily be.

9, Conduit Street, London, W., *27th June* 1903.

CHRONICLE.

The Annual Dinner.

The Annual Dinner of the Institute was held at the Whitehall Rooms on the evening following the presentation of the Royal Gold Medal. The President, Mr. Aston Webb, R.A., presided, and among the guests were the American Ambassador and Mr. McKim, the Earl of Lichfield, Viscount Dillon, the Bishop of London, Lord Redesdale, Lord Monkswell, the Lord Mayor of London, the Hon. Sir Schomberg McDonnell, Sir Thomas Sutherland, Sir Edward Poynter, P.R.A., Sir Wm. Richmond, Sir L. Alma-Tadema, Sir Charles Scotter, Sir Norman Lockyer, K.C.B., Sir Arthur Rücker, Sheriffs Sir George Truscott and Sir Thomas Brooke-Hitching, Rev. Sir Borradaile Savory, Sir Henry Howorth, K.C.I.E., the Archdeacon of London, the President of the Royal College of Surgeons, the President of the Surveyors' Institution, the Master of the Carpenters' Company, Mr. Thomas Brock, R.A., Mr. Edwin Abbey, R.A., Mr. George Frampton, R.A., Mr. H. H. Armstead, R.A., Professor Armstrong, Mr. G. L. Gomme, &c. At the high table also were Sir John Taylor, K.C.B., and two Past Presidents, Sir Wm. Emerson and Mr. Macvicar Anderson. There were also present the President of the Architectural Association, and the Presidents of the following Allied Societies: The Royal Institute of Architects of Ireland, Manchester, Birmingham, Leeds and Yorkshire, The Northern Association, Glasgow, Cardiff, S. Wales and Monmouthshire, and Devon and Exeter. The Earl of Wemyss and March, Sir Francis Sharp Powell, M.P., and Mr. Fletcher Moulton, K.C., M.P., had accepted invitations, but at the last moment were prevented from coming. The following is an alphabetical list of the company present:—

Mr. Edwin A. Abbey, R.A.; Mr. Maurice B. Adams [*F.*]; Mr. T. W. Aldwinckle [*F.*]; Sir Lawrence Alma-Tadema, R.A. [*H.F.*]; Mr. Louis Ambler [*F.*]; The American Ambassador; Mr. J. Macvicar Anderson, F.R.S.E., *Past President*; Mr. F. R. Appleton; Mr. H. H. Armstead, R.A.; Professor Armstrong, F.R.S.; Mr. G. C. Ashlin R.H.A. [*F.*], President of the Royal Institute of Ireland Mr. R. Stephen Ayling [*F.*]; Mr. Frank T. Baggallay [*F.*]; Mr. T. J. Bailey [*F.*]; Mr. R. S. Balfour [*A.*]; Mr. F. W. F. Barham; Mr. C. E. Barry [*A.*]; Mr. A. W. Bartlett; Mr. H. H. Bartlett; Mr. J. W. Beaumont [*F.*], President of the Manchester Society; Mr. W. C. Beetles; Mr. E. Ingress Bell [*F.*]; Rev. Canon Benham; Mr. Thomas Blashill [*F.*]; Mr. G. F. Bodley, R.A. [*F.*]; Mr. T. V. Bowater; Mr. R. H. Boyce, C.B.; Mr. Thomas Boyce; Mr. Thomas Brock, R.A.; Mr. H. K. Bromhead [*F.*], President Glasgow Institute; Sheriff Sir Thomas Brooke-Hitching; Mr. C. W. Brooks [*A.*]; Mr. D. J. Brooks; Professor G. Baldwin Brown [*H.A.*]; Mr. Albert Buck, President of the Surveyors' Institution; Mr. J. J. Burnet, A.R.S.A. [*F.*]; Mr. W. D. Caröe, F.S.A. [*F.*]; Mr. R. F. Chisholm [*F.*]; Mr. F. Dare Clapham [*A.*]; Mr. J. R. Clayton, F.S.A.; Mr. Thomas E. Colcutt, *Vice-President*; Mr. H. H. Collins [*F.*]; Mr. H. O. Cresswell [*F.*]; Mr. A. W. S. Cross [*F.*]; Mr. Alfred Culshaw [*F.*]; Mr. Percivall Currey [*F.*]; Mr. Thomas W. Cutler [*F.*]; Mr. Alfred Darbyshire, F.S.A., *Vice-President*; Dr. Morriston Davies; Mr. G. B. Davis; Mr. C. J. Dawson [*F.*]; Mr. T. M. Deacon; Viscount Dillon, President of the Society of Antiquaries; Mr. A. Dixon; Mr. T. O. Donaldson; Mr. D. G. Driver; Mr. F. E. Eales [*F.*]; Mr. Alfred East, A.R.A. [*H.A.*]; Mr. C. L. Eastlake; Col. John Eaton, C.B. [*F.*]; Mr. Ernest Emerson [*A.*]; Sir Wm. Emerson [*F.*], *Past President*; Mr. R. Fabling; Mr. W. G. Faulkner; Mr. H. Favarger [*F.*]; Mr. W. M. Fawcett, F.S.A. [*F.*]; Mr. Owen Fleming [*A.*]; Mr. Wm. Flockhart [*F.*]; Mr. Frank Fox [*A.*]; Mr. George Frampton, R.A. [*H.A.*]; Mr. Ernest George [*F.*]; Mr. E. M. Gibbs [*F.*]; Mr. Herbert Gilbey; Mr. Wm. Glover [*F.*]; Mr. G. L. Gomme, F.S.A., Clerk of the London County Council; Mr. Alexander Graham, F.S.A., *Hon. Secretary*; Mr. E. A. Gruning [*F.*]; Mr. A. L. Guy [*A.*]; Mr. Edwin T. Hall [*F.*]; Mr. S. H. Hamp [*A.*]; Mr. F. H. A. Hardcastle [*A.*]; Mr. W. J. Hardcastle [*F.*]; Mr. Henry T. Hare [*F.*]; Mr. Arthur Harrison [*F.*], President of the Birmingham Association; Mr. Christopher Harston [*F.*]; Mr. Killingworth Hedges; Mr. G. T. Hine [*F.*]; Mr. Francis Hooper [*F.*]; Mr. George Hornblower [*F.*]; Mr. F. V. Hornby; Sir Henry Howorth, K.C.I.E.; Sir Henry Howse, President of the Royal College of Surgeons; Mr. A. A. Hudson [*H.A.*]; Mr. C. E. Hutchinson [*A.*]; Mr. E. B. I'Anson [*F.*]; Mr. B. Ingelow [*F.*]; Mr. Arnold Inman; Rev. A. H. James; Mr. T. E. Lidiard James [*F.*]; Mr. H. O. Jenkyn; Mr. Zeph. King [*F.*]; Mr. F. G. Knight [*F.*]; The Earl of Lichfield; Mr. Frank Lishman [*A.*]; Rev. J. B. Lock; Sir Norman Lockyer, K.C.B.; The Bishop of London; The Lord Mayor; Mr. Henry Lovegrove [*A.*]; Mr. R. Falconer Macdonald [*F.*]; Hon. Sir Schomberg McDonnell, K.C.B.; Mr. C. F. McKim, *Royal Gold Medallist*; Mr. H. C. Marshall; Mr. Leonard Martin [*F.*]; Mr. J. Douglass Mathews [*F.*]; Mr. W. H. Matthews, Mayor of St. Pancras; Mr. Walter Millard [*A.*]; Mr. H. Percy Monckton [*F.*]; Lord Monkswell, Chairman of the London County Council; Mr. David Morgan [*F.*], President of the Cardiff, South Wales, and Monmouthshire Society; Mr. J. D. Mould [*F.*]; Mr. S. J. Mould; Mr. E. W. Mountford [*F.*]; Mr. Louis Mullgardt; Dr. A. S. Murray [*H.A.*]; Mr. John Murray [*F.*]; Mr. W. Hilton Nash [*F.*]; Mr. P. E. Nobbs [*A.*]; Mr. Paul Ogden [*F.*]; Mr. T. H. Openshaw, C.M.G.; Mr. F. B. Osborn [*F.*]; Rev. A. W. Oxford; Mr. Arthur S. Parker [*A.*], President of the Devon and Exeter Society; Mr. Alfred Parsons, A.R.A.; Mr. E. Harding Payne [*A.*]; Mr. F. W. Peel [*A.*]; Mr. H. A. Pelly [*A.*]; Professor Beresford Pite [*F.*]; Sir Edward Poynter, Bart., P.R.A. [*H.F.*]; Col. Lenox Prendergast [*H.A.*]; Mr. A. N. Prentice [*F.*]; Mr. G. H. Fellowes Prynne [*F.*]; Colonel Raban, C.B.; Mr. Herbert Read [*F.*]; Lord Redesdale, C.V.O.; Mr. Harry Redfern [*F.*]; Mr. Reeves-Smith; Sir William Richmond, K.C.B., R.A. [*H.A.*]; Mr. Wm. Robinson; Mr. E. R. Robson, F.S.A. [*F.*]; Mr. G. St. Croix Rose; Sir Arthur Rücker, F.R.S.; Mr. R. Fabian

Russell [*F.*]; Rev. Sir Borradaile Savory, Bart.; Mr. Joseph Sawyer [*F.*]; Sir Charles Scotter; Mr. H. D. Searles-Wood [*F.*]; Mr. C. H. Seely, M.P.; Mr. W. H. Seth-Smith [*F.*]; Rev. W. Shapcott; Mr. George Sherrin [*F.*]; Lieut.-Col. Shipway; Professor F. M. Simpson [*F.*]; Mr. John W. Simpson [*F.*]; Archdeacon Sinclair; Mr. G. T. Skilbeck; Mr. Basil Slade; Lieut. Sladen, R.N.; Mr. John Slater, *Vice-President*; Mr. J. Osborne Smith [*F.*]; Mr. Walter Smith, Master of the Carpenters' Company; Mr. Lewis Solomon [*F.*]; Mr. Leonard Stokes [*F.*]; Mr. E. J. Stubbs; Sir Thomas Sutherland, G.C.M.G.; Mr. Arthur Sykes [*A.*]; Mr. A. W. Tanner [*A.*]; Mr. Henry Tanner [*F.*]; Mr. J. Walton Taylor [*F.*], President of the Northern Association; Sir John Taylor, K.C.B. [*F.*]; Mr. A. H. Ryan Tenison [*F.*]; Mr. J. Lewis Thomas, F.S.A. [*H.A.*]; Mr. A. Hessell Tiltman [*F.*]; Alderman and Sheriff Sir George Truscott; Rev. A. W. Upcott; Mr. Craig Wadsworth; Mr. Frederick Wallen [*A.*]; Mr. T. H. Watson [*F.*]; Mr. Aston Webb, R.A., *President*; Mr. E. A. Webb; Mr. Maurice E. Webb; Mr. W. A. Webb [*A.*]; Mr. C. W. F. Wheeler [*A.*]; Mr. Frederick Wheeler [*F.*]; Mr. Thomas B. Whinney [*F.*]; Mr. W. Henry White [*F.*]; Mr. H. H. Wigglesworth [*F.*]; Mr. E. Jenkyn Williams; Mr. Butler Wilson [*F.*], President of the Leeds and Yorkshire Society; Mr. Edmund Wimperis [*A.*]; Mr. J. T. Wimperis [*F.*]; Mr. R. Winder; Mr. W. Wonnacott [*A.*]; Sir Henry Trueman Wood; Mr. R. Selden Wornum [*F.*]; Mr. R. T. Wright; Mr. Clyde Young [*A.*]; Mr. W. J. Locke, *Secretary*, and other members of the Executive, and representatives of the Press.

Grace was said by the Bishop of London, and a selection of music was performed by the Leoni Ladies' Quintette during the evening.

The toasts of "The King," and "Queen Alexandra, the Prince and Princess of Wales, and the other members of the Royal Family," were proposed by the President and drunk with enthusiasm, as was also that of "The President of the United States," which followed. In proposing the latter the President referred to the tragic circumstances under which President Roosevelt was called to his great office. As Englishmen, he said, they all knew how nobly he had fulfilled the expectations of the American people.

The LORD MAYOR proposed "The United States of America." There was a special reason, he said, why they should on this occasion, wish prosperity to the United States, for they had with them an American who had succeeded in carrying off the Gold Medal offered by the King. This honour had been conferred upon their guest, the President of the American Institute of Architects, Mr. C. F. McKim. He (the Lord Mayor) remembered travelling a good many years ago through the United States, and he visited Chicago soon after the terrible fire that reduced it almost to ashes. The time that had elapsed between that calamity and his visit was very short, but the Americans, with that splendid energy which characterised them, had already covered the city with palatial warehouses, and he remembered attending a nigger entertainment where the entertainer said "the Americans are a wonderful people, Chicago is a wonderful city. It was in ruins a short time ago, and now it is mostly covered with palaces that you can rent anywhere." That was long ago, and it was doubtful if they could rent anywhere in Chicago now, for that city, like other great cities in the States, had achieved an era of great prosperity, and he hoped it would continue to flourish. Great Britain had been singularly fortunate in the official representatives of America in this country. We had had Phelps, James Russell Lowell, and Bayard; and in Mr. Choate we had a worthy successor to the others.

His Excellency THE AMERICAN AMBASSADOR, in response, said it was a well-established rule of diplomacy that an Ambassador should be seen and not heard, and that no one of them ought to have any experience in public speaking. He therefore would have been most happy if the proper man had been called on to respond to that toast. And who was "the proper man" on this occasion but Mr. C. F. McKim, on whom, in London, the eyes of all his countrymen were turned at this moment with satisfaction for having achieved the honour he had—not so much for himself as for them? But if he must respond to this great and ever growing sentiment for the United States of America, he thought he knew in what spirit he ought to address that assembly. He might call their attention to the fundamental principles upon which his Republican Government rested; he might draw a distinction, perhaps flattering to both sides, between the advantages of democracy and monarchy; he might treat of those trusts and combines which were constantly being thrown in their teeth by the jealous people of Great Britain! But it was upon no such subject that he would address them, for it seemed to him that he should speak of the United States on that occasion only in an architectural sense—in a sense appropriate to their vocation and the sentiments of fidelity to their profession which had called them together that evening. And he must begin by admitting that the United States architecturally were still in the making—they were still, in that sense (and would continue to be for some time), entirely unfinished, and they were likely to afford to the noble profession of architecture lucrative employment for a thousand years to come; and then, at the expiration of that time, there would still be many vast places to be improved, many noble structures to be erected, much utility, much skill, and much beauty to be lavished upon the buildings of the still distant future. He believed Americans still had a tariff upon works of art—not so much, not so high, as it once was, but much higher than he hoped at some time in the future it would be. But there was no tariff in the United States upon architects. Americans were constantly preaching the doctrine, and they put it in practice, of "the open door," and he was authorised by Mr. McKim to say that there was room for all. Mr. McKim had not authorised him to say, but he knew it, that in the natural course of events—far distant might be the day!—when Mr. McKim himself would retire, that would make room for—how many? Certainly for a hundred, possibly for a thousand! The history of the architecture of the United States—he spoke with deference and submission, for he knew nothing about it—seemed to be well exemplified in the history of the city of Washington and the district of Columbia, which was the seat of government. It appeared from a report lately made by the distinguished Gold Medallist, acting under a commission from Congress, that at the beginning of their Government the first President and his Secretary of State were well versed in this noble art of architecture, and that they brought to their aid knowledge and skill acquired upon this side of the water, and a distinguished architect and engineer from the Continent; and they laid out in magnificent proportions the city which was to be the future capital of the United States. That was a day of very small things and small means, and the great project which had been laid out was only in very small part accomplished, and, as time went on, the Capitol, with its originally limited proportions, was constructed. The city was laid out generally according to the plans of the father of his country at the outset, but they were often departed from, and it was only in recent years that the attention of the Government and of the architects of the country was drawn to the fact that that plan had not been carried out in its full perfection—had, in many ways, been departed from; and the genius of the architectural profession in America, as represented by the gentleman they had honoured by conferring upon him the Royal Gold Medal, and his associates had, combined with the wisdom of Congress, brought about a restoration of the original plan. He believed that under their combined efforts the future would show a city of Washington, with its public buildings, its magnificent avenues, its glorious parks, extending through the district of Columbia, which would challenge comparison with any capital in the world. Well, as it had been with the capital of the Federal Government, so it had been in large measure with the whole of the country and people of the United States. For many years, for many generations, they were altogether too poor to indulge in the luxury of architecture—and nobody knew better than that present company how very costly and expensive a luxury it is. In those early days they imported architects—they believed that architects, like all other men, were free and equal, and with certain inalienable rights, such as life, liberty, and the pursuit of business—and they permitted them to come, and they did come, and helped the United States in their then humble undertakings. But now the circumstances of the United States had improved. It was an ill wind that blew nobody good, and the vast accumulations of property, the vast companies and communities of interest which people on this side of the water seemed to be somewhat afraid of—whatever other effect they might be having—were certainly having the effect of bringing the noble profession of architecture into the very front rank of occupations in America. Almost every countryside, from the Atlantic to the Pacific, was being adorned with comely, commodious, and beautiful residences, such as could be seen in the photographs of examples on the walls of the Institute meeting-room the previous evening. The municipalities of the United States were competing with each other as to which should have the finest buildings to represent the municipality; the States—and there were forty-five of them—were contending one with the other to see which should have the noblest, the most commodious, the most beautiful State House; and over and above them all, the United States of America was spending the national funds very largely in the erection all over the country of court houses, and custom houses! As the country grew, so they wanted more, and though they had many architects they wanted a great many more—although they had many highly skilled architects, they wanted a great many more of the highest skill and character. He had said the previous evening that the United States was a paradise of architects. That was no joke, it was really so; and he thought architects would come from the east and from the west, and from all parts of the world, and help Mr. McKim and his associates in adorning and decorating the great Republic of which they were all so proud. This was a glowing and a happy picture which he held out to them; it was equally glowing, equally happy, equally satisfactory, to Americans themselves. He hoped that when they visited America—and it was really an essential not only of a liberal but of a fair education for an Englishman—that in America they would be able to present to the visitors, not only in their national capital, but in all the states and towns and rural districts, work by their architects which would be worthy of any country and of any time.

Sir L. Alma-Tadema, R.A. [*H.A.*], said it was his great pleasure to propose the toast of "The Houses of Parliament," and he was called upon to do it as "an architect." They should not laugh, for he was proud of being an Honorary Fellow of the Institute. He felt great admiration for the Parliament that had built up our history, and great respect for the laws it had given us.

The Earl of Lichfield, who responded for "The House of Lords," said that a little while ago there was an agitation to end or mend the House of Lords, but he thought that now most people would wish to leave things as they are. The fact was that the continuance of the House of Lords depended very largely on the rules which regulated recruiting to that House. Every year distinguished men from politics, science, art, recruited the House of Lords, and as long as that system was kept up the Lords would retain the confidence of the country. He was glad to have that opportunity of congratulating his friend and their President on the honour which had recently been done him, and which he so well deserved.

Mr. C. H. Seely, M.P., responded for "The House of Commons." Parliament, he said, owed much to architects, for one of the greatest architects who ever lived built them a palace to live in—one of the finest, if not *the* finest, building of modern times in Europe. It was true that building was not quite as comfortable to live in as it might be; when one sat on the floor of the House on a crowded night because there was no room on the benches, and when one looked round the small smoking-room to try and find a seat, one wished that the architect had paid a little more attention to comfort and a little less to the external appearance of the building. But if Parliament owed much to architects, architects owed something to Parliament, and the Institute must feel that this was so in the last Parliament. As one walked down Whitehall and elsewhere and saw the new public buildings rising, it must be felt that Parliament had done its best to afford architects an opportunity which all States ought to give to those who devoted their lives to architecture—an opportunity of showing in material the ideas which were in their minds, and of erecting great buildings for future generations to see. And if, sometimes, the question of the cost of raising the funds for what had been described that evening as "an expensive luxury" caused occasional unpleasant hours in Parliament, still, among the architects of England were to be found men who could build fine buildings for posterity to see. There should be sympathy between statesmen and architects: for statesmen were engaged to some extent in the same work. "Empires rise and fall, and nations come and go"; but future generations judged architects largely by the buildings that they left behind them. It was by the solidity of the Roman stonework that we judged of the strength and the solidity of the old Roman Empire now gone; it was by the grace of the Greek architecture that we judged of the greatness of the Greek mind. Statesmen of England, as they looked about our country and thought of the works of the past and the works of the present, might well feel that when they were past and gone future generations would judge this and past generations by the buildings left behind. He believed that modern buildings would be worthy of the present times. Statesmen wrote their minds upon the daily press; architects wrote their names in stone on the buildings they erected. Those who were engaged in the business of daily government must feel humble as they came before those who built not only for the day but for the distant future.

The Lord Bishop of London, in proposing the toast of "The Royal Institute of British Architects and the Allied Societies," said that in one sense he was fitted to propose the toast, for he came with the perfectly unbiassed mind of one who did not pretend to lay down the law to experts—perhaps it was for that reason that he had always got on so well with architects he had worked with? He fancied that the clergyman who thought he knew all about it must be rather an irritating person at times to the architect. He once had half an hour's conversation with the late Sir Arthur Blomfield, who was to build him what was the apple of his eye—what he had long wished to have in Bethnal Green, *i.e.* the building which was erected and called Oxford House. What Sir Arthur Blomfield did by that building for the new settlement, for a new kind of work, had greatly helped him along in his work at Oxford House, and it gave him a high opinion of the practical way in which the architect set about his work. In passing he would like to mention that magnificent church at Smithfield which had been recreated by their President. That brought him to what he specially wanted to say—*i.e.* that those in his profession were working together against three foes, the chief of which was the materialism of our time. Against that materialism, which was demoralising all sections of society, he looked to architects to help him. St. Paul's Cathedral alone had preached a grander sermon than had ever been preached in its walls. It stood there with all its noble dimensions, and those who came within its walls were comforted and calmed by the building itself. He could not mention St. Paul's in the circumstances without thanking one of the millionaires of the United States, Mr. Pierpont Morgan, for having given, at great cost, the electric lighting of the Cathedral, which was now lighted efficiently for the first time. He thought he consecrated one church a month throughout the year, and it was architects who by their buildings were helping to break through the materialism of the day. And in that war, too, they fought against ugliness in every form. Whom had he found helping him in the slums—who had helped him to cope with the ugliness to be found there? Why, it was an architect who was present among them that evening—viz. Mr. Owen Fleming. Another foe was the worldliness of the world, and in that connection he had read with the greatest interest and pleasure a delightful article on the late Mr. F. C. Penrose, which appeared in a recent issue of the Institute Journal.* Towards the end of that article the writer said:—

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* Mr. Grace's Memoir, in the number for 9th May, pp. 339 *sqq.*

"Was he successful? We must also ask ourselves, What is success? Perhaps we are all too apt to measure success by conventional standards, in which monetary reward and wide repute claim a large part. Yet it is certain that these, combined or apart, cannot in themselves bring happiness, nor even content. If to have carried through a long life a name untarnished, to have held to truth and right, to have been free of any mean or petty impulse, and to have won the affectionate respect of his fellows, be success, then I think that Francis Cranmer Penrose was a successful man." The great architects did not look to the worldly success, to the money reward, but to ideals—the ideals beyond this world, ideals which would leave lasting memorials behind. In giving the toast, he would conclude by congratulating the President upon the great distinction which had just been accorded him.

The President, who on rising was received with musical honours, thanked the assembly for the kindness of their reception. As architects they were proud of the terms in which the toast had been proposed. They had many distinguished guests there that evening, and on behalf of the Royal Institute he wished to thank them for being present. With their distinguished American guests with them, their thoughts naturally went towards American affairs, and he could not do better than touch on one or two American matters. One of Mr. McKim's works had been the restoration of the White House. He did not know whether they knew the reason for that restoration—he only mentioned it to forget it as soon as mentioned—but it was because, in 1814, the British occupied and partially destroyed the White House. After that the building was patched up and repaired, but it was not until the present President took office that Mr. McKim was called in, and all traces of what once happened were removed. In the same way, they hoped that all traces of what happened at that time had been entirely wiped out of the minds of both peoples. Another American matter which very closely interested the members of the Institute was that the city of New York, in their Charter, which was granted in 1901, had provided for the formation of a Commission of Art, consisting of the Mayor of New York, the three presidents of the principal art societies of New York, and a painter and sculptor and architect, who were chosen each for three years, and three other residents of New York. These gentlemen, he understood, served on the commission without monetary consideration, but suitable offices were provided for them, and the expenses of the Commission were paid for by the city. The duties of the Commission, he believed, were these: no work of art could be brought now into New York without it being first submitted to this Commission for their approval; and by works of art were meant, not only pictures and sculpture, but monuments, arches, lamps, and decorations of all sorts in the city. In the same way no work of art could be removed without similar approval. The Commission could also be requested to report upon all improvements which were proposed in New York—to advise as to new streets, municipal buildings, parks, gardens. He mentioned this because it seemed to him to be a matter on which they might take a leaf from America. As to the public improvements now taking place, and the public buildings being erected in London, the Government had of late years done the Institute the compliment of requesting them to nominate architects from whom they could select several to compete, or select one to carry out the work. In all cases the Government had loyally kept to the understanding, and had selected one of the architects nominated by the Institute. Unfortunately, in the case of the London County Council, that had not been done. In the case of the Holborn to Strand improvement the London Council applied to the Institute for the names of architects to prepare schemes; a competition was held, and Mr. Hare's scheme was selected as the best; but he was sorry to say that no steps had been taken to give effect to it. On the contrary, as far as he could understand, the recommendation of the Council's own Committee, that some control of the buildings to be erected should be exercised, had been entirely thrown over, and that great and important improvement, as far as could be seen, was to be carried through without any controlling hands on the buildings to be erected [cries of "Shame"]. Another point he might mention was that of architectural education. In America all the universities of the different States had a recognised architectural school, through which all students passed before entering on the practical work of an architect's office. We were beginning to attempt something of the same kind, and the University of Liverpool, whose architectural school was under Professor Simpson, and the Architectural Association in London, under Mr. H. T. Hare, had already started a day school for architects, where students could be prepared before entering an architect's office. But at present there was an absence of method amongst us. The Institute were proposing to do something to remedy this, for they had been invited by outside people to prepare some scheme which should bring all the means of education to a focus. The Institute had appointed a committee, and they intended to appoint others to join it, and see if they could not do something to meet the difficulty which they felt at the present time. In conclusion, the President said he should depart a little from the toast-list, and proposed that they should drink the health of their very distinguished guest, Mr. McKim, the Royal Gold Medallist.

The toast having been drunk with musical honours, Mr. McKim, in briefly acknowledging the toast, said that since his arrival in England he had met with a succession of agreeable surprises which he never dreamt even were in store for him. He desired again to thank them for the honour and distinction they had conferred upon him—a distinction which on his side of the water would be felt to be conferred upon all, for he felt he had been selected for the honour in consequence of the accident of being President of the American Institute [No, no].

Mr. J. Macvicar Anderson, *Past President*, in proposing the toast of "The Guests," said that amongst their guests that evening were several most distinguished men in various walks of life, and by their presence they had greatly added to the pleasure and gratification of the members of the Institute. With the toast he coupled the name of Sir Arthur Rücker, Principal of the University of London.

Sir Arthur Rücker, in response, said he hoped that in the future London would erect more buildings like that of the Royal College of Science. The new University must surely bring about the gradual extension of the means of education. They had, by the generosity of the Government, been provided with dignified buildings for their headquarters at South Kensington, and he hoped that before long there would arise numerous buildings worthy of the architects of the country, and also of science.

The proceedings then terminated.

The President's Academy Honours.

The Institute has had no opportunity to vote formally its congratulations to the President upon his attainment to full rank as a Royal Academician. His reception, however, at the Dinner last Tuesday leaves no doubt but that his honours are viewed by members with feelings of pride and of very genuine pleasure. His rising to respond to the toast of "The R. I. B. A." was the signal for a display of feeling not often witnessed at an Institute gathering. The Earl of Lichfield and the Bishop of London both referred to his promotion in their speeches, and tendered their congratulations.

The Birthday Honours.

The congratulations of the Institute will be cordially tendered to the following members whose names appear in the King's Birthday Honours List:—

William Alfred Gelder [*F.*], five times Mayor of Hull, who has received the honour of Knighthood.

Robert Cochrane, F.S.A. [*F.*] and Henry Tanner [*F.*], both of whom have been made Companions of the Imperial Service Order.

Unauthorised Use of Institute Title on Envelopes and Circulars.

At the Meeting of the Council held on Monday the 22nd inst., the following Resolution was passed:—

> That the attention of the Council having been drawn to envelopes and the heading of circulars issued by Mr. Silvanus Trevail to certain members of the Institute, the Council express the opinion that such unauthorised use of the title of the Institute on the envelopes and circulars is unjustifiable, and should not be repeated.

The late William Simpson, R.I.

There are still many members of the Institute who cherish the kindliest recollections of the veteran war artist-journalist, William Simpson, R.I., for many years an Hon. Associate of the Institute, and a generous contributor to the Journal and the old Transactions on Indian archæological subjects. He has been dead nearly four years, and his loss has been irreparable, for the vast stores of knowledge he had laid up during long and painstaking travel in the most out-of-the-way regions of the far East were always being drawn upon for the benefit of the Institute Journal. His old friends will learn with interest that his Autobiography, edited by Mr. George Eyre-Todd, is about to be issued by Mr. Fisher Unwin. The work is to be illustrated with many full-page reproductions of Simpson's finest and most notable pictures in the possession of His Majesty the King, the Duke of Newcastle, the Marquis of Bute, the Earl of Rosebery, the Earl of Northbrook, the Palestine Exploration Fund, and at the British Museum, South Kensington, and elsewhere. There is to be an *édition de luxe*, limited to 100 copies, at the price of two guineas net; and an ordinary edition at a guinea net. The work is to be issued for the benefit of Mrs. Simpson, the author's widow.

As the earliest of war artists, Simpson went through the campaign of the Crimea, and with such distinction as to earn for himself the sobriquet thenceforth of "Crimean Simpson." He was in India directly after the Mutiny. He followed Napier to Magdala, and took part in bringing the son of King Theodore home. He went with the Germans to Paris, and was shot at at Sedan. He was arrested as a spy, and passed through the dangerous episodes of the Commune in the French capital. And he took a brilliant part in the Afghan War, and by the merest chance—having left his comrades for a day or two to go on an exploration of his own—escaped assassination with Cavagnari in Cabul.

Among more pacific episodes of which he had intimate personal knowledge were the Kertch Expedition, the Duke of Newcastle's tour to Circassia, the opening of the Suez Canal, the examination of Warren's excavations at Jerusalem and Schliemann's at Mycenæ, the great Vatican Council of 1869, the Indian tour of the King (then Prince of Wales), the Afghan Boundary Commission, and such royal marriages as those of the Czar of Russia, the Emperor of China, the German Emperor (then Prince William of Prussia), and the Princess Louise.

Additions to the Library : Erratum.

In the list of Additions to the Library in the *Supplement* of the 13th June 1903, the presentation of the book entitled "The Housing Handbook : The Housing of the Working Classes" is wrongly ascribed to the author. The book was purchased and presented to the Library by Mr. Richard Armstrong [*F.*].

LEGAL REGISTRATION OF ARCHITECTS.

Royal College of Art, S.W., 22nd June 1903

To the Editor of the JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

DEAR SIR,—I hope that Mr. Seth-Smith's letter in the last number of JOURNAL will lead to the publication of the opinions of those provincial brethren who oppose the narrow policy of the Registration Bill.

I call the policy narrow because it is conceived mainly in the interests of its promoters, and will ensure, if adopted, the registration and recognition of that great majority of pseudo-architects who at present have not joined the Institute.

There are many architects, however, not members, that all of us would be proud to welcome into our body, and whose action is due to various causes, among which I venture to say without hesitation that the abstention of the Royal Institute of British Architects from the Registration movement is not one.

It is important, however, to remember that the Registration movement may give legal recognition to the very men of whom the whole profession have the best reason to be ashamed. The honest sense that binds members of the Institute together as those who decline to take unfair advantage of their professional position by receiving commissions and discounts from tradesmen employed for their clients, and which is essential to their clients' confidence, is ignored by the Registrationists, and we are entitled to resent the impertinence which would patronise the Institute by using its educational examinations while refusing its code of professional morality.

Mr. Seth-Smith's confidence in affidavits does him honour; but, frankly, in this matter I have none.

The political aspect of the question is, however, decidedly unsatisfactory, for the Registration movement needs only an active propaganda to secure for its support all the unqualified (in the broadest sense of the term) practitioners in the country, and whose professed willingness to adopt the Royal Institute of British Architects' examinations for other people, but not for themselves (otherwise than by affidavit of exemption), is calculated to give to the policy of the Institute, as a body requiring an educational standard in its members, the appearance of desiring Registration.

I hope that it will become clear as a result of the agitation of the past few weeks—

1. That the Institute favours the freest exercise of the art of architecture without any legal restriction whatever.
2. That the Institute will continue to do everything in its power to promote architectural education and the attainment of a high degree of professional qualification.
3. That the Institute will consider itself charged to protect the public by the code of professional integrity of its members against dishonourable practices by those who call themselves architects.

Legal action could only do this imperfectly and formally, and is not desired even as such by the Registrationists; but it can be done effectually and simply by the strengthening influence of union with one's fellows of similar aims, and in a body which is representative and has the high purpose of furthering the art of architecture; it is for this that the Royal Institute of British Architects was founded.

Of Mr. Seth-Smith's value to the Registration movement I have the highest opinion; but the reasons that he gives for it, and his confusion of education with the question, indicate that he has not grasped the fact that the passage of such a Bill would inevitably lower the whole standard of the profession—which we are all sure he does not desire—as well as limit the exercise of an art that should be as free as song. Personal appeals may be perhaps allowed in our own JOURNAL, and so I would beg him to leave the Registration Bill to those who decline, for very good reasons of their own, to join the Institute.—Yours truly,

BERESFORD PITE.

ORIGINS IN EGYPTIAN ARCHITECTURE.*

It is no doubt unfortunately the case that at present no early dynastic Egyptian crude brick building of the Negada tomb type shows more than the lower portion of the walls. I do not deny that, in the original crude brick buildings represented by such a sarcophagus as that of Menkaura, wood may have been used for horizontal members, and doubtless was used for roofs. I merely deny that there is any justification for Perrot and Chipiez's imaginary early stage of wooden architecture of the type represented in their illustration, fig. 83 (vol. i. p. 117).

As to the lotus capitals, I would refer Professor Baldwin Brown to Foucart's book, where he clearly proves the buds of the Abusir capital to be lotus buds, and no other, every characteristic detail being preserved.

W. Martin Conway.

REFORM IN THE LAW OF ANCIENT LIGHTS.

The Ancient Lights Bill, to amend the Law relating to Easements of Light, brought in by Mr. Fletcher Moulton, Mr. Haldane, Mr. Robson, Mr. H. D. Greene, and Mr. Herbert Robertson, was read a first time in the House of Commons on the 22nd inst.

This Bill is the result of the labours of the Joint Committee of the Institute and the Surveyors' Institution, whose appointment was the outcome of the Papers read before the Institute on the 19th March 1900 by Mr. Fletcher Moulton, K.C., M.P., Professor Beresford Pite [*F.*], and Mr. Douglass Mathews [*F.*]. The debate on that occasion lasted two evenings, and a resolution was come to that the law was in urgent need of reform, and the Council were empowered to take the necessary steps to bring the matter before Parliament with a view to getting an alteration of the law. The members of the Joint Committee thereupon appointed were Messrs. Edward A. Gruning [*F.*], J. Douglass Mathews [*F.*], J. Fletcher Moulton, K.C., M.P. [*H.A.*], and the late Professor Roger Smith [*F.*], appointed by the Institute; and Messrs. A. Rose Stenning, A. T. Steward, H. Chatfeild Clarke, and G. Mallows Freeman, K.C., appointed by the Surveyors' Institution. The Secretary of the Institute acted as Secretary to the Joint Committee.

The Bill, which has received the approval of the Councils of both bodies, is as follows:—

A BILL

INTITULED

"AN ACT FOR AMENDING THE LAW RELATING TO EASEMENTS OF LIGHT."

Be it enacted by the King's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

Part I.

Preliminary.

Preliminary Short Title. **1.** (1) This Act may be cited as The Ancient Lights Act, 19 .

Commencement. (2) This Act shall come into operation on the day of 19 .

Extent. This Act does not extend to Scotland or Ireland.

Part II.

Definitions.

2. (1) In this Act unless a contrary intention appears:—

(i.) Tenement includes land also any dwelling-house workshop or other building.

(ii.) Window includes any aperture for the purpose of admitting light.

(iii.) Street means and includes any highway road bridge lane mews footway square court alley passage whether a thoroughfare or not and a part of any such highway road bridge lane mews footway square court alley or passage.

(iv.) Owner includes every person in possession or in receipt of the rents and profits of a tenement and having an interest in such tenement not less than as a tenant thereof from year to year.

(v.) Occupier does not include a lodger.

(vi.) The tribunal of appeal means the tribunal of appeal constituted by this Act.

(2) In this Act if two tenements are so situated that the owner of the first is entitled to a right to light passing over the second the first tenement is called a dominant tenement and the owner thereof a dominant owner and the second tenement is called a servient tenement and the owner thereof a servient owner and the first tenement is referred to as being dominant over the second and the second tenement as being servient to the first.

Part III.

Limitation of the Amount of Light of a Dominant Owner.

Limitation of the amount of light of a dominant owner. **3.** (1) From and after the commencement of this Act an owner of a dominant tenement shall subject as herein provided be entitled to such amount of light passing over the servient tenement as is reasonably necessary for the comfortable use and enjoyment of the dominant tenement if a dwelling-house or for its beneficial use and occupation if used as a place of business or for any other purpose than a dwelling-house and he shall not be entitled to any extraordinary amount of light necessary for any particular purpose trade or occupation.

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* See Professor Baldwin Brown's observations, p. 420 *ante*.

(2) Nothing in this section shall confer on the owner of any dominant tenement over the tenement servient thereto any right to a greater amount of light than he would have possessed if this Act had not passed.

(3) This section shall not apply to a tenement in which a trade or occupation requiring an extraordinary amount of light has been continuously carried on for ten years during the continuance of such trade or occupation.

(4) This section applies only when the right of the dominant owner to the light passing over the servient tenement becomes absolute and indefeasible after the commencement of this Act.

Part IV.

Obstruction of Light by Notice in Place of Physical Obstruction.

Obstruction of light by notice in place of physical obstruction.

4. (1) The owner of a tenement which is not at the time servient to another tenement but over which such other tenement would in course of time become dominant may serve upon the occupier of and upon any other persons whom he knows to be interested in the tenement which would become so dominant a notice (in this Act called an Obstruction to Light Notice).

(2) An Obstruction to Light Notice shall be in writing in the form contained in the 1st Schedule to this Act or as near thereto as circumstances will permit and shall be accompanied by a plan and section or elevation showing the windows the access of light through or to which is to be deemed obstructed.

(3) On and after the day of service of an Obstruction to Light Notice the access of light to the windows mentioned in the Obstruction to Light Notice shall be deemed to be obstructed in like manner as if the same were actually and physically obstructed.

(4) Any person aggrieved by an Obstruction to Light Notice shall be entitled to the like relief so far as may be as he would have been entitled to if the access of light to the windows mentioned in the Obstruction to Light Notice had been actually and physically obstructed by the person serving the Notice.

(5) An Obstruction to Light Notice shall subject to any relief which may be granted before the expiration of one year from the day of service thereof by a Court of competent jurisdiction be deemed to be and shall have the like effect as an interruption within the meaning of Section 3 of the Prescription Act 1832 which has been submitted to or acquiesced in for a year.

(6) On the sale of any tenement it shall be the duty of the vendor to disclose any Obstruction to Light Notice which may have been served in respect of that tenement.

(7) It shall be the duty of any person who may receive an Obstruction to Light Notice under this Act in respect of a tenement which he holds as occupier or lessee for a term of years or for lives to forward or deliver such notice forthwith to his next superior landlord.

Part V.

Right to Light passing over Streets.

Light passing over streets.

5. No title shall be acquired by prescription under the Prescription Act 1832 or at Common Law or otherwise by the owner of any building which shall have been erected after the 31st day of December 1890 and which abuts on any street to a right to light passing over a tenement on the opposite side of that street.

Part VI.

Provisions for Certificated Plans of Buildings about to be taken down.

Provisions for certificated plans of buildings about to be taken down.

6. (1) The owner of a building which is intended to be taken down and rebuilt may cause plans sections and elevations of such building to be prepared and may make application to the Official Surveyor for an inspection and survey of such building and for a certificate of the correctness of such plans sections and elevations and such application shall be dealt with as hereinafter provided.

(2) Every such application to the Official Surveyor shall be accompanied by a payment of the sum payable in accordance with the table of fees contained in the Schedule to this Act and such sum shall be his fee for the inspection and survey and for the grant or refusal (as the case may be) of the certificate and it shall not be lawful for the Official Surveyor to demand or receive any further fee or payment in respect thereof.

(3) The Official Surveyor shall either grant a certificate that in his opinion the plans sections and elevations are correct or he shall refuse to grant such certificate in which case he shall state the grounds of such refusal and such certificate or refusal shall be in the form set out in the Schedule to this Act with such modifications if any as the circumstances may require.

(4) Where the Official Surveyor refuses to grant a certificate applied for under this Act the applicant may if he think fit cause fresh plans sections and elevations to be prepared having regard to the objections stated in the form of refusal and may thereupon make a further application to the Official Surveyor to inspect and survey the building.

(5) If the Official Surveyor on re-inspection and re-survey be of opinion that the fresh plans sections and elevations are correct he shall grant a certificate under this Act with respect thereto.

(6) Where the Official Surveyor refuses to grant a certificate under this Act it shall be lawful for the applicant at any time within fourteen days after the date of such refusal to make application to the tribunal of appeal by way of appeal against such refusal and such appeal shall be accompanied by a copy of the form of refusal by the Official Surveyor.

(7) A certificate granted under this Act shall be conclusive evidence of the correctness of such plans sections and elevations in any actions or matter relating to the right of the owner of such building to light.

(8) In this section the Official Surveyor means in the case of a building situate in the County of London the District Surveyor appointed to the district in which such building is situated and in the case of a building situated in any other county but not within a borough the County Surveyor and in the case of a building situated in a borough the Borough Surveyor.

(9) The Official Surveyor shall keep a register of such drawings and shall thereupon be entitled to demand and receive the further fees set out in the Schedule to this Act. Such drawings shall be deposited at the Town or County Hall and be open to public inspection on payment of a fee as set out in the Schedule to this Act.

Part VII.

Statement of Claims arising out of Rights to Light.

7. (1) Where a servient owner is erecting or intends to erect any new building or alter any existing building on his tenement he shall at the request of the dominant owner give facilities to the dominant owner or any person duly appointed on his behalf to inspect the plans elevations and sections of such intended new building or alteration (if any) and if there be no such plans elevations and sections shall give such information relating to such intended building or alteration to the dominant owner as the dominant owner may easonably require.

Dominant owner to be entitled to plans of new building on servient tenement.

(2) A dominant owner who has made such request as aforesaid may at any time within seven days after inspecting such plans elevations and sections or receiving such information serve upon the servient owner a notice of his objections or the terms on which he is willing to permit the servient owner to erect his building. Such notice shall be in writing and sent by registered post or served personally.

(3) Such notice shall contain particulars of the estate or interest claimed by the dominant owner in the dominant tenement and also the name and address of a surveyor who will act on behalf of the dominant owner in case a difference between him and the servient owner should arise.

(4) If the servient owner shall within seven days after the service on him of such notice serve the dominant owner with notice in writing that he accepts the terms of such notice there shall be deemed to be an agreement between the dominant owner and the servient owner that the servient owner will fulfil the requirements of such notice.

(5) If the servient owner is not willing to accept the terms of such notice he shall within seven days after the service on him of such notice serve notice in writing that he refuses the terms of such notice and shall state the name of a surveyor who will act on his behalf.

(6) In this section the expressions dominant owner and servient owner include respectively persons claiming to be such respectively.

8. (*a*) Unless the servient owner shall have accepted the terms of the notice the two surveyors so appointed shall within ten days of the appointment of the last of them meet together and endeavour to determine the questions in dispute arising out of the said notice and shall before entering upon such questions appoint by writing under their hands an umpire to whom the matter shall be referred in case such arbitrators fail to agree.

(*b*) The umpire shall be a Member of the Royal Institute of British Architects or of the Surveyors' Institution.

(*c*) The umpire shall view the site and the dominant and servient tenements and make his award within twenty-one days after the original time appointed by this Act for making the award by the arbitrators has expired.

9. The arbitrators or their umpire may by their award decide any of the following matters namely:—

(*a*) The right of the owner of the tenement who proposed to build to carry out his intended works.

(*b*) The alteration if any necessary to be made in carrying out the intended new buildings or alterations so as to prevent or lessen obstruction to the lights of the tenements as set out in the notice of objection.

(*c*) The amount if any of compensation of every description to be made to the owner lessee or occupier.

(*d*) The alterations if any to the adjoining premises by light reflecting surfaces enlargement of lights heightening of premises or other means.

(*e*) The amount of costs to be paid by either party.

(*f*) Any other matter necessary to enable the difference between dominant and servient owners to be determined.

10. In the event of either party neglecting to appoint a Surveyor within the prescribed period or of the unwillingness of the umpire appointed to act and no other umpire being agreed upon within a period of ten days from his refusal to act either party may apply to the President for the time being of the Royal Institute of British Architects or the President for the time being of the Surveyors Institution who shall forthwith appoint an umpire.

11. Any award given by such arbitrators or their umpire shall be conclusive and shall not be questioned in any Court with this exception namely that either of the parties to the difference may appeal therefrom to the tribunal of appeal within fourteen days from the date of the delivery of the award and the tribunal of appeal may subject as hereafter in this section mentioned rescind the award or modify it in such manner as it thinks just.

Appeal from Surveyors to tribunal of appeal.

12. If the appellant from any such award where the amount awarded exceeds 500*l.* in money damages or cost of works or where the interference with the proposed works exceeds 500*l.* refuses to accept the decision of the tribunal of appeal and gives security to be approved by the members of that tribunal to prosecute his appeal within one month from the publication of such decision and to abide the event thereof all proceedings in the tribunal of appeal shall thereupon be stayed and the appellant may bring an action in the High Court against the other party to the difference.

Reference of dispute to High Court.

13. The plaintiff in such action shall deliver to the defendant an issue without pleadings whereby the matters in difference between them may be tried and the form of such issue in case of dispute or in case of the non-appearance of the defendant shall be settled by the High Court and such action shall be prosecuted and issue tried in the same manner and subject to the same incidents in and subject to which actions are prosecuted and issues tried in the Commercial Court of the High Court or as near thereto as circumstances admit.

Settlement of an issue to determine dispute.

14. If the parties to any such action agree as to the facts a special case may be stated for the opinion of the High Court and any case so stated may be brought before the Court in like manner and subject to the same incidents in and subject to which other special cases are brought before such Court or as near thereto as circumstances admit and any costs that may have been incurred in the tribunal of appeal by the parties to such action as is mentioned in this section shall be deemed to be costs incurred in such action and be payable accordingly.

Special case.

Part VIII.

Constitution of Tribunal of Appeal.

15. For the purpose of this Act a tribunal of appeal shall be constituted as follows:

Constitution of a tribunal of appeal.

Three members shall be barristers-at-law and shall be appointed by a Secretary of State.

Three members shall be appointed by the Council of the Royal Institute of British Architects.

Three members shall be appointed by the Council of the Surveyors Institution.

Duration of office.

16. A member of the tribunal of appeal shall be appointed for a term of one year and at the expiration of his term of office shall be eligible for reappointment.

Removal of members.

17. The Lord Chancellor may remove for inability or misbehaviour any member of the tribunal of appeal.

The tribunal of appeal may act notwithstanding any vacancy in their body but not less than three members of whom one shall be a barrister-at-law shall attend at the hearing of any case.

18. The tribunal of appeal may hold sittings in any part of England in such place or places as may be most convenient for the determination of proceedings before them.

Vacancies to be supplied.

19. Upon the occurrence of any vacancy in the tribunal of appeal or during the temporary absence through illness or other unavoidable cause of any member thereof a Secretary of State the Council of the Royal Institute of British Architects or the Council of the Surveyors Institution (as the case may be) whichever of them shall have appointed the member of the tribunal whose place shall be vacated shall appoint forthwith a fit person to be a member (either temporary or permanent) of the tribunal in place of the member whose place is vacated or who is temporarily absent as aforesaid.

Remuneration of members of tribunal.

20. There shall be paid to each member of the tribunal of appeal such fees as a Secretary of State shall with the concurrence of the Treasury determine.

Officers &c. of tribunal.

21. It shall be lawful for the tribunal of appeal to appoint such clerks officers and servants as they may find necessary who shall be paid such salaries as shall be determined by a Secretary of State with the concurrence of the Treasury and to provide offices.

22. The members forming for the purposes of each case the tribunal of appeal shall personally visit the tenements both of the appellants and the respondents.

Jurisdiction of tribunal.

23. The tribunal of appeal shall subject to the provisions of this Act have jurisdiction and power to hear and determine appeals referred to them under this Act and shall have power to determine whether and if so to what extent the proposed new buildings should be amended or the dominant premises altered.

24. For all the purposes of and incidental to the hearing and determination of any appeal the tribunal shall (subject to any rules of procedure duly made) have power to hear the parties interested either in person or by Counsel as they may think fit and to administer oaths and to hear and receive evidence and require the production of any documents or books and to confirm or reverse or vary any decision and make any such order as they may think fit and the costs of any of the parties to the appeal shall be in the discretion of the tribunal of appeal.

Regulations as to procedure and fees.

25. The tribunal of appeal may from time to time subject to the approval of the Lord Chancellor make regulations consistent with the provisions of this Act as to the procedure to be followed in cases of appeal to the tribunal of appeal including the time and notice of appeal and as to fees to be paid by appellants and other parties.

Enforcement of decision of tribunal.

26. Any order of the tribunal of appeal may be enforced by the High Court as if it had been an order of that Court.

27. In any action by a dominant owner against a servient owner in which an injunction is claimed notwithstanding that an injunction may by an interlocutory order have been already granted upon the application by motion of the servient owner either party may apply to a Judge of the High Court either to hear such action with assessors or to refer the matter to arbitration in accordance with the provisions hereinbefore contained. If on the hearing of such application the Judge shall be of opinion that the claim may be reasonably satisfied by damages he may on his own motion refer the case to arbitration and if on such hearing he shall be of opinion that the action for an injunction has been unreasonably or unnecessarily commenced he may order the party bringing such action to pay the costs of the defendant on such scale as he may deem fit.

LEGAL

What constitute "Working-class" Dwellings?

CROW *v.* DAVIS.

This was an appeal, by way of Special Case, from a decision of Mr. Haden Corser, police magistrate sitting at Worship Street Police Court. The facts are shortly as follows:—

On 10th February 1902 the respondent, Moses Davis, a builder and property owner, served the appellant, Arthur Crow, District Surveyor for Whitechapel, with notices under Section 145 of the London Building Act setting forth his intention to erect five shops and private houses in Spelman Street and Chicksand Street, Whitechapel. He also submitted plans of the principal floors of the buildings for the approval of the District Surveyor. On 25th February 1902 the District Surveyor served the respondent with "notices of objection" under Section 150, on the ground that the proposed buildings would contravene Section 13 (5) of the Act of 1894, as amended by Section 4 of the Amendment Act of 1898, which provides that "no dwelling-house to be inhabited or adapted to be inhabited by persons of the working-class shall without the consent of the Council be erected or re-erected within a distance of 20 feet from the centre of the road to a height exceeding the distance of the front or nearest external wall of such building from the opposite side of such street."

The builder appealed to the magistrate, who disallowed the District Surveyor's objection, being of opinion that the respondent had no intention that the houses should be occupied by persons of the working-class only, but that he intended them for occupation by anyone who would take them. He was further of opinion that the case was governed by the case of *The London County Council* v. *Davis*.

The magistrate, however, consented to state a case for the opinion of the High Court, which came before the Lord Chief Justice (Lord Alverstone), Mr. Justice Wills, and Mr. Justice Channell, on the 19th May.

Mr. Avory, K.C., Mr. F. F. Daldy, and Mr. A. S. Poyser, for the appellant; Mr. Cripps, K.C., and Mr. Clavell Salter for the respondent.

The Lord Chief Justice, in giving judgment allowing the appeal, said he had come to the conclusion that the case required further consideration by the magistrate. He did not understand his first finding—viz. that "the houses when completed would not be specially adapted for habitation by persons of the working-class only. They would be suitable for occupation by any persons living in a small way, whether belonging to the working-class or not." The kind of question, he thought, that ought to be considered by the learned magistrate would be: whether the building was adapted for habitation by persons who would live as the working-classes do—that is to say, in small flats or separate tenements, all, so to speak, in the same house. If the true view of the section be that one had to see whether the house was adapted to be inhabited by persons of the working-class (meaning thereby a class of persons who would live in two or three rooms, and who would be likely to take two or three rooms in a house for the purpose of doing for themselves in those rooms without having any connection at all with the rest of the house) then he thought that the learned magistrate had excluded from his mind some of the broad considerations that he ought to have considered with reference to the overcrowding or the crowded inhabiting of houses of this class. Passing on to another finding—viz. that "the respondent had no intention that the houses should be occupied by persons of the working-class only, but that he intended them for occupation by anyone who would take them"—his Lordship said that that seemed to him to exclude what he might call the natural consequences of the way in which the houses would be occupied as they were built and constructed. If the builder constructed them in such a way that it was practically certain that they would only be inhabited by persons of the working-classes, then the fact that he intended them for occupation by anyone who would take them, meaning thereby that some persons might be willing to take a particular house out of a series and not occupy them or not underlet them for the purposes of the working-classes, would not be sufficient. But, coupling that with the magistrate's statement that he did not think either of the lessees would have taken those houses for the purposes of occupation if they were not going to underlet part, it seemed to his Lordship that the magistrate may have excluded from his consideration the question of whether or not the houses as constructed by the respondent were intended to be occupied by persons of the working-classes, even although there may have been an intermediate tenant. His Lordship doubted whether in this case the learned magistrate had not gone too far by limiting the scope of that adaptation, and by limiting the scope of the intention, which was indicated by the introduction of the words "special" and "only" with regard to adaptation, and by the word "only" with regard to intention. The learned magistrate seemed to have felt himself bound by the finding of fact in the case of *The London County Council* v. *Davis* as well as by the finding of law. Speaking for himself, his Lordship said that if he had to treat this matter as a question of fact, on the facts of this case, both from the point of view of adaptation and intention, it seemed to him to be far stronger in favour of the view that the houses were intended to be inhabited, and adapted to be inhabited, than they were in *The London County Council* v. *Davis*.

Mr. Justice Wills said he could not help feeling that the learned magistrate had laid too much stress on that word "only," both with regard to adaptation and with regard to intention. It was difficult to say that it was necessary that these should be adapted only to persons of the working-classes if they were adapted substantially for persons who were liable to the same difficulties in respect to overcrowding, and who, in that sense, belonged to the same class as the working-classes. With regard to intention, he could not help thinking that what the learned magistrate meant was, that the person who was intending to build them was indifferent as to who would be his tenants so long as he could let them, but that their ultimate destination, in whosesoever hands they were, was that they were to become working-class tenements, or to be occupied by persons of the working-class.

Mr. Justice Channell said that he preferred to base his decision upon the ground that the magistrate's finding as to the adaptation for persons of the working-class only was not satisfactory, and it did not seem to him to bring the case within what he personally thought he meant, and what he thought Mr. Justice Hawkins also meant, in the case that had been referred to. If the magistrate meant to find that those buildings were specially adapted in their construction for occupation as small dwellings, he should have thought that he had found facts which would bring it within this provision, because he did not see how they could say that a room was specially adapted for a man belonging to the working-class as distinguished from a clerk or any person of small means but earning his own living in any way. It must mean so adapted for separate dwellings as that it was likely that a large number of persons would be living in the house; and if so, it came within the mischief of the Act.

MINUTES. XVI.

At the Sixteenth General Meeting* (Ordinary) of the Session 1902–3, held Monday, 22nd June 1903, at 8 p.m., Mr. Aston Webb, R.A. elect, in the Chair, with 36 Fellows (including 15 members of the Council), 43 Associates (including 2 members of the Council), 2 Hon. Associates, 1 Hon. Fellow, and numerous visitors, the Minutes of the Business Meeting held 7th June [p. 432] were taken as read and signed as correct.

The Hon. Secretary announced the decease of Mr. Edward Woods, *Hon. Associate*, elected 1877, and it was resolved that a message of sympathy and condolence be sent from the Institute to his relatives.

The decease was also announced of Robert Walker, *Fellow*, of Windermere, elected 1893.

Members attending for the first time since their election were formally introduced and admitted by the President.

The President delivered an Address on presenting the Gold Medal, the gift of His Majesty The King, to Mr. Charles Follen McKim, President of the American Institute of Architects, and Mr. McKim having been duly invested with the Medal, replied in acknowledgment of the honour.

His Excellency the American Ambassador (the Hon. Joseph H. Choate), Sir Lawrence Alma Tadema, R.A. [*H.A.*], and Mr. Edwin A. Abbey, R.A., also addressed the Meeting on the subject of the Presentation.

At the request of the President, Mr. McKim intimated his willingness to serve the Institute as Hon. Corresponding Member, and expressed his gratification at being nominated for the honour.

The proceedings then closed, and the Meeting separated at 9.30 p.m.

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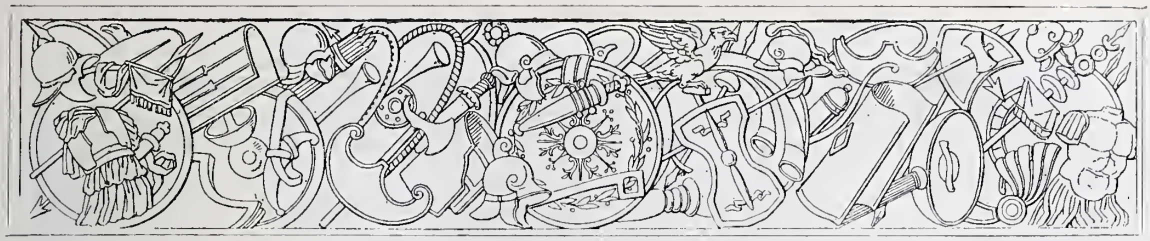
* At the opening of the proceedings the Chairman reminded members that a Special General Meeting [see p. 412] had been summoned for that evening, but that with their permission the Special Meeting would be adjourned to a more convenient occasion.



THE ARCHITECTURAL DEVELOPMENT OF LONDON.

By Owen Fleming [*A.*].

Read before the American Institute of Architects at Washington, U.S.A., 12th December 1902.

DURING October 1902 it was my good fortune to be able to visit Washington, and I was then profoundly impressed with the stately dignity of the American federal city. The view of the Capitol from the end of Pennsylvania Avenue, illumined by the yellow rays of the setting sun, was one of the finest sights I have ever seen, and it was evident that those who were entrusted with the original planning and arrangement of the city had fittingly prepared it for the great part that it is destined to play in the councils of the nations. It was also my privilege to be able to visit the Congressional Library to study the exhaustive models and plans therein displayed for the further architectural development and embellishment of the Capitol and its surroundings. These designs convinced me that the architects and sculptors of to-day, appointed by Congress for the conception of this great scheme, have not only followed loyally in the steps of L'Enfant, but have developed and perfected his ideas with a breadth of grasp that calls forth our warmest feelings of admiration. There can be no doubt that when this scheme has been carried into execution Washington will become one of the fairest cities of the world.

It is an interesting coincidence that while Washington is thus preparing for itself a more glorious dress Westminster happens to be similarly engaged. The old rookeries and slums which now obstruct and confuse the southern view of Barry's masterpiece are to be swept away, and the grey towers of the Mother of Parliaments are to stand isolated on the river bank flanked on either side by the majestic curve of the Thames Embankment. This simultaneous manifestation of public interest in the architectural surroundings of the supreme Halls of Council of the two great divisions of the English-speaking race seems almost to possess special significance; and perhaps we shall not be too sanguine if we permit ourselves to see in this event some indication of a general desire that, in future, differences of opinion may be resolved in the calm and serene atmosphere of the deliberative assembly, and that the attention of our national councillors may be solely concentrated upon the peaceful development of the human race.

The architectural development of Washington will, however, be placed before you by far abler pens than mine. The task that has fallen to my lot is sufficiently difficult. I have been asked to indicate the chief causes which have contributed to the present shape and configuration of London, and in this connection it is important constantly to bear in mind that London had not the advantage of the conscious, deliberate scheme of planning that fell to the lot of Washington. The city is the unconscious outcome of natural requirements and conditions. It is perhaps a standing example of the practical working of the laws of least resistance, and therefore, though it can lay claim to the close attention of the student of the picturesque, its beauty is largely accidental. I propose in this paper to indicate the chief causes which have operated in the formation of the London of to-day: that great city which, with its suburbs, houses a population approaching 6,500,000 souls.

The geographical distribution of the city, or the county—as Greater London is now known, is a flat river basin in which the river takes a circuitous course from west to east. The existence of this river has not only determined the original site of London, but it has also operated to determine the line of general growth and the direction of the main streets. On either side of the river, and at some little distance therefrom, are ranges of low hills, and it is chiefly between these two ranges that London has grown, though on the southern side the hills have long ago been built over and the city has passed far beyond them. In order to obtain a clear idea of how London has grown, it is perhaps desirable to classify its history into certain distinct stages. These stages seem to fall naturally under the following heads:—

1. The birth of Westminster.
2. The birth of London.
3. The junction of Westminster and London.
4. The Mediæval City.
5. London's lost opportunity.
6. The Great Northern Boulevard.
7. The works of the ducal landlords and the Prince Regent.
8. The works of the Democratic Councils.
9. Future London.

1. *The Birth of Westminster.*—If the student of London's history will take a map, his attention will be arrested by a long straight road running from the extreme north-west corner to Hyde Park, and he will also notice another road, not perhaps quite as straight, but forming evidently a main highway from the centre of South London to the eastern edge of the map. He will probably surmise that these roads, known by the names of the Edgware Road and Peckham Road respectively, once had some connection; and his surmise will be accurate, for these two roads mark the site of one of the earliest British roads. In Roman times this road was known by the name of the Watling Street, and it connected the south coast of England near Dover with the northern districts of the kingdom. It was not possible to cross the great River Thames near its mouth, but about the spot where the Abbey of Westminster now stands the river spread its course over many miles of marshes, and when the tide went out it became comparatively easy to cross the river on foot. In the midst of these marshes was a small hill, known as "Tot Hill," and it is probable that on this little hill were arranged some buildings to rest man and beast on their journey to the north. On this spot the Romans also erected some buildings, but later on the spot fell into disuse owing probably to the construction of a bridge across the river lower down, and the diversion of the ancient Watling Street across the new bridge. For some centuries after this it is probable that Westminster was nothing more than a waste, but during Saxon times it seems to have been regarded as a suitable spot for the residence of the kings. The Saxon King Edgar is supposed to have displayed a great interest in this district, and to have founded the present Abbey, endowing it with a great manor. Whether the Danish King Canute and his sons lived here or not is uncertain, but it is clear that King Edward the Confessor was devoted to Westminster, that he lived there himself, and that he built a great church on the spot. Though this king died nearly a thousand years ago, his tomb still remains in the central chapel of the present Abbey, and his shrine is still visited annually by devoted Roman Catholic pilgrims. From this date onwards the Abbey and its precincts were continually being developed and extended. The kings also enlarged and beautified their palaces, and the present Westminster Hall, built in 1398 by Richard II., occupied the site of a previous building by William Rufus in 1090. It would seem almost a natural development that the seat of the sovereign power should also become the place of judgment, and this was the case. It is only within our own times that the Law Courts have been removed from Westminster.

2. *The Birth of London.*—The earliest written reference to the existence of London was made in the year of our Lord 61, when the Roman historian Tacitus informs us that it was a place of comparatively large population. Although the note of Tacitus is the first written reference to London, it is believed that the Trinobantes had a settlement on the present site of London years before the Roman invasion, and it is reasonable to suppose that this was so. Archæologists incline to the view that the name London was originally spelt "Llyndin," which means the Lake Fort. It has already been explained that the greater part of the site of the present County of London was so near the river level that at high tides the river spread out over these low-lying lands and took the form of a lake. About the site of the present London Bridge, however, the land was of a higher altitude, and beyond the reach of the highest tides. The effect of this change of configuration was at once to produce a navigable river, and also to ensure dry land at the side eminently suited for the construction of wharves and houses. Such a position was almost ideal for the settlement of merchants in those days when the only law was the sword. This spot was bounded on the south by the River Thames, on the west by a smaller tidal tributary known as the Fleet, on the east by marshes difficult to cross, and on the north by dense forests. Here then was a site for a city from which merchants could reach through their ships the whole of the then known world, and yet upon which their goods could be stored in comparative safety and security. The river which washed its shores was too deep to ford, but a ferry probably existed from very early times. The exact date when the ferry was replaced by a permanent bridge is not known, but when the foundations of the present London Bridge were excavated, in the early part of last century, numerous coins were found in good preservation bearing the effigies of the Roman Emperors Constantius and his sons, Crispus and Constantine, and with the syllable "P. Lon." as mint mark. This not only indicates that London was at that period (A.D. 309) important enough to be the seat of a mint, but also gives ground for the view that these coins, in some form or other, commemorated the construction of the bridge. This view is supported by the fact that evidences of Roman occupation have been traced along the line of the southern access to the bridge. During the early years of the Roman occupation London was known by the name of "Londonium," but towards the end of the Roman occupation the name was changed to "Augusta." It is clear that the construction of the bridge would have tended to divert the line of the old Westminster ford, and this is what actually seems to have happened. The old road passing down Edgware Road, and known as Watling Street, is believed to have been diverted at the Tyburn, or about the present site of the Marble Arch. From this spot the line of traffic diverged to London Bridge, passing along the line of the present street called Holborn. It entered the City at Newgate. The Romans had another road from the bridge that went northwards. It occupied approximately the site of the present Bishopsgate Street. From this road a branch road to the right went to Colchester. In the early years of the Roman occupation a wall round the city was not considered necessary, but later on, about the middle of the fourth century, a wall was built surrounding the whole city. This wall enclosed an area of about three square miles. There were two land gates, three water gates, and a gate to the bridge.

It is very difficult to say what happened after the Roman legions were recalled to Rome. Deprived of their natural protectors, the merchants must have felt it difficult to carry on their trade. At all events, it seems clear that there was an interval of many years during which London was gradually deserted. Walls became ruins, grass grew again in the streets, and it was not until late in the Saxon period that it once again regained its traditional importance, and henceforward was recognised as the capital city.

3. *The Junction of Westminster and London.*—It is clear that between the king's stronghold of Westminster with its adjacent powerful Abbey, and the great commercial City of London, frequent communication was necessary, and the line of this communication naturally

followed the curve of the river. This road became known by the name of the Strand. On the borders of this street were grouped various communities who found the position convenient. The sites between the Strand and the river were used for the palaces of the great nobles. Essex Street marks the site of the town house of the famous Earl of Essex; the adjoining land was the property of the powerful Duke of Norfolk; Somerset House, Savoy, the home of the Cecils, and Northumberland House (afterwards Northampton House) and other great palaces linked London with Westminster on the river bank, while further north there were many settlements of monks and lawyers. The Knights Templars settled on that portion of the Strand nearest the City of London, and this portion was known by the name of Fleet Street. It crossed the River Fleet by a bridge and entered London by the ancient Roman "Lud Gate." On the other side the Strand was connected with Westminster by what is now known as Whitehall.

4. *The Mediæval City.*—Throughout the reigns of the mediæval kings London grew in wealth and importance. It did not spread very far, but the walls that the Romans had built were slightly enlarged. Within the walls, however, the city was continually becoming more picturesque. The great conventual buildings of St. Paul's, which legend affirms occupied the site of a Roman temple, were demolished in the early part of the fourteenth century, and in their place rose a magnificent Gothic Cathedral with a spire rising to the extraordinary height of 520 feet. In the reign of Henry II. an eager citizen, FitzStephen by name, gives us some idea of the beauties of the City. He tells us of the large number of churches in the city, which in his day were already 126 in number, and describes the houses with their overhanging gables and the line of booths in the streets. At this date the Tower of London had been well advanced, and away from the main streets FitzStephen tells us that there were many houses well furnished with trees, spacious and beautiful.

The Londoners of those days seem to have lived a merry life, and we hear later of such magnificent pageants as the triumphal entry of Henry V. after the Battle of Agincourt, welcomed by the wonderful chorus of the priests which even now seems of impressive grandeur.

London was also the scene of stirring political events. It was a Lord Mayor of London who struck down the sturdy Kentish peasant, Wat Tyler, and later on Sir Thomas Wyatt marched through London in insurrection against Queen Mary. This was the beginning of sad times for London, and the memory of the burnings of noble divines and others, culminating with the martyrdom of the Bishop of London in 1555 and the Archbishop of Canterbury himself, made an impression that is even yet vivid in the minds of Londoners.

5. *London's Lost Opportunity.*—The era of the Renaissance brought sadness to London. The growth of the city was even in those days causing alarm, and it is interesting to read the proclamation issued by Queen Elizabeth in the year 1580:

> "The Queen's Majesty, perceiving the state of the City of London and the suburbs and the confines thereof to increase daily by access of people to inhabit in the same, in such ample sort, as thereby many inconveniencies are seen already, but many greater of necessity to follow. . . .
>
> "For remedy whereof, as time may now serve, until by some further good order be had in Parliament or otherwise, the same may be remedied; Her Majesty, by good and deliberate advice of her Council, and being also thereto moved by the considerate opinions of the Lord Mayor, Aldermen, and other the grave wise men in and about the city, doth charge and strictly command all manner of persons of what quality soever they be, to desist and forbear from any new buildings of any house or tenement within three miles of the gates of the said City of London, to serve for habitation or lodging for any person, where no former house hath been known to have been in the memory of such as are now living; and also to forbear from letting or setting or suffering any more families than one only to be placed, or to inhabit from henceforth in any one house that heretofore hath been inhabited. . . .
>
> "Given at Nonesuch, the seventh day of July 1580 in the two-and-twentieth year of Her Majesty's reign."

King James followed the example of Queen Elizabeth, and forbade the building of houses in the suburbs, but this artificial prevention of natural expansion had its inevitable result. The houses in the city were crowded more and more closely together, and it was not surprising that such overcrowding, coupled with the absence of sanitary regulations, resulted in a considerable amount of sickness. The visitation increased in virulence and ultimately took the form of the Plague. There are probably few persons who have not shuddered at the thought of this great city at the time of the plague: all business ceased, the streets were deserted, and the grim silence was only broken by the rumbling wheels of the death-cart and the hoarse cry echoing along the empty streets, "Bring out your dead." There was no time for ceremonious burying. Great pits were dug around the city, and the bodies were tipped into them pell-mell without coffins or even grave clothes.

The terrors of the Plague were from an architectural point of view perhaps of less importance than the great disaster of the fire in 1666. There have been other fires more extensive in character perhaps than this, but probably the destruction of rare and precious objects has never been equalled. In five days London lost her magnificent Cathedral, the Exchange, Custom House, the beautiful halls of City Companies, and numerous churches and chapels stored with rich vestments and priceless ornaments. In all 396 acres of houses, 400 streets, 13,200 dwellings, 89 churches besides chapels, and four of the city gates were destroyed.

But if London had lost what could never be replaced, here was a unique opportunity for the reconstruction of the city on a monumental plan, and the great architect of the day, Sir Christopher Wren, rose to the occasion and produced such a plan. It was perhaps the first scheme on a large scale for the design of a city, and it is well worth the closest study. Wren was handicapped by the lines of the old streets that had not been burned, but he utilised these as the basis of his plan. The old Leadenhall Street was to be carried straight through to the "Lud Gate," passing the Royal Exchange, which was arranged to be the centre of a scheme of radiating streets similar to those around the Capitol at Washington. St. Paul's was placed majestically fronting the wide *piazza* formed by the junction of Leadenhall Street with a new street of equal width nearly parallel to the river. The river itself was embanked with a spacious quay the whole way from the Temple to the Tower, and in front of London Bridge was created a great circus from which again streets radiated in all directions. It is melancholy to have to record the fact that this great scheme was brushed on one side by the haste of the commercial interests to begin rebuilding, and by the unwillingness of the citizens to co-operate for the common good. London thus lost an opportunity that will never recur.

6. *The Great Northern Boulevard.*—As might have been expected, the edicts of Queen Elizabeth and King James against the extension of the city were set aside by the catastrophe of the days of King Charles I. The geographical situation which had first marked out the site of London as eminently suited for commerce continued to exist, and with the development of civilisation in Europe and Asia, London continued to form the centre of attraction for great numbers of people. The city spread far beyond the ancient walls. The space between the Strand and the ancient Watling Street or Holborn became filled with houses. Even this extension was insufficient, and the city spread still further northward. Traffic increased, and it became clear that some further means of communication was required in the north. This was carried out in the reign of George II. by the construction of a series of roads beginning at the old "Moor Gate," passing to Islington, descending the Pentonville Hill and running past the church of St. Marylebone to the village of Paddington. The road was designed on a far more liberal scale than any of the mediæval roads, and although its width has been allowed to be encroached upon here and there, speaking generally, this road maintains the characteristics of a boulevard, and it is likely will continue to do so.

7. *The Works of the Ducal Landlords and the Prince Regent.*—Towards the end of the eighteenth century the number of the rich citizens of London had materially increased. Moreover, the rapid advancement of learning, the increased attention given to the fine arts, and the general desire for more healthful habitations, caused a continually increasing demand for dwelling-houses of a more stately character than those which had previously been found sufficient. The result of this movement was to bring into the building market the large estates and manors of the dukes and other nobles to the north and south of the old Holborn and its westward continuation of Oxford Street. Whatever political view may be taken of the question of large leasehold estates, architects are bound to chronicle with gratitude the liberal way in which these estates were laid out. The usual plan was to form a large open square, to plant trees and shrubs therein, and to arrange the houses facing upon the road surrounding the square. Frequently the whole of the houses surrounding the square were designed with a view to their architectural symmetry, and there is something very attractive about these great London squares, which still are favourite residential quarters. It is a matter of regret that this system of forming squares has not been followed in recent developments of building estates.

At the beginning of the nineteenth century, a combination of circumstances arose that materially altered the aspect of West London. The then Prince Regent (afterwards George IV.) was in power, and exerted his influence to carry through a scheme of rebuilding that in those days might fairly lay claim to the title of majestic. The Prince Regent's palace was then known as Carlton House, occupying the *place* now existing between the Athenæum and the United Service Clubs in Pall Mall. In the north-west of London were some large open farms which had previously formed part of the lands of one of the houses of Henry VIII. The leases of the farms were falling in, and the Prince Regent conceived the idea of connecting a broad street from his palace of Carlton House to these farm lands (now Regent's Park), which were to contain a country house for him. The architectural opportunity thus afforded was a great one, and the Prince Regent was fortunate in finding an architect, Mr. John Nash, who designed the whole scheme. Americans who visit London are familiar with Nash's fine achievement. The skilful way in which the lower part of Regent Street (as the new street was called) was placed at right angles to the palace and connected with the upper part of the street by a majestic quadrant: the circuses which cunningly disguise the crossings of the new street with Piccadilly and with Oxford Street; the way in which the spire of All Souls' Church was brought forward to mask the awkward sweep into Portland Place; the fine semicircular treatment where Portland Place enters the park; the width of the new streets and the dignified designs for that period of the buildings fronting the streets, form a striking tribute to Nash's genius. He was also far-sighted enough to foresee the possibilities of forming the present Trafalgar Square, and he did this by continuing Pall Mall until it reached the top of the present square. The whole improvement was a great one, and though perhaps its savour is rather too artificial and reminiscent of the dandyism of Beau Brummell to be altogether in accord with modern taste, yet it is right to give this work a foremost place in the architectural development of London. It is a curious instance of the irony of human life that the Prince Regent's proposed residence in the park was never built, that financial considerations caused the demolition of Carlton House, and that the fine colonnade that Nash built along Regent Street to shelter the exquisites of the day has been swept away by an unsympathetic posterity.

8. *The Works of the Democratic Councils.*—If London in the eighteenth century were dominated by the aristocrats, the London of the nineteenth century passed from under their sway, and gradually became more and more democratic in its government and in its ideals.

One reason for this change was the development of free political institutions all over the country; another was the growth of the more purely commercial instinct; and perhaps a third reason is to be found in the extraordinarily rapid growth of the population. The ancient cities of London and Westminster were no more than islands in a great sea. North, south, east, and west the city spread in all-devouring fashion. Railways and tramways were introduced and helped in this development. Some form of common government became necessary for the whole agglomeration. Government commissioners, who were first appointed, were found unequal to the need, and they were succeeded by an indirectly elected council which governed London for many years, but which was in turn supplanted by a council elected directly by the people. Even this government was held to be insufficient for the occasion, and its energies have recently been aided by the creation of numerous subordinate cities and boroughs who have each their own mayor, aldermen, and councillors, and who are each entrusted with a considerable amount of local autonomy. The work of these nineteenth century councils in the further development of the planning of London is set forth very clearly by Mr. Percy Edwards in his *History of London Street Improvements.* Mr. Edwards tells us how, during the century, new lines of traffic have been opened and streets widened in all directions. The most notable of these improvements have been (*a*) The embanking of the Thames, and (*b*) The junction of Holborn with the Strand.

The Thames Embankment had long been a public ideal. It was unfitting that a city of the magnitude of London should be intersected by acres of offensive mud-banks, and between the years 1865 and 1875 three-and-a-half miles of these mud-banks were embanked by a road, generally 100 feet wide, at a cost of nearly 12½ millions of dollars. Between this road and the city beautiful gardens have been laid out, and the crowds that throng this thoroughfare on fine summer evenings, and listen to the municipal bands playing in the municipal gardens, form some evidence of the way in which this great work is appreciated by the people of London.

The junction of Holborn with the Strand is now in progress. It is an improvement of the highest architectural importance, and will profoundly affect the future of the city. On referring to the map of London, the observer cannot but be struck with the insufficiency of through lines of communication from north to south. The ancient Edgware Road forms one such thoroughfare, Regent Street another, but between Regent Street and the Great North Road of the Romans, now represented by the Kingsland Road, there is no really adequate north and south thoroughfare. It will be seen, however, that the means of making such a thoroughfare exist. On the north there is the line of streets beginning at Southampton Row, and continuing to Hampstead, while on the south Waterloo Road is the first link of a chain of streets running to the far south. The essential object is to connect these two detached lines of traffic, and this will be effected by the avenue now in course of construction. Many plans for this avenue were laid before the London County Council, and it is pleasant to be able to record the fact that the scheme which met with universal approval and consequent adoption was based upon that submitted by the Royal Institute of British Architects. The new street * will be 100 feet wide, or 10 feet wider than Regent Street. At its southern end it bifurcates into the form of a crescent.* The arms of the crescent are each 100 feet wide, and the Strand, which forms its base, has been widened to an even greater width, thus preserving for all time the two fine Renaissance churches occupying the centre of the Strand. The motives of the Institute in making this plan were manifold. They perceived the architectural objections to making the side view of St. Mary's church steeple the objective of the street vista, as was at one time proposed, and they desired to afford the opportunity for the creation of a new architectural objective worthy of the unique occasion. This can be provided on the island site axial with the new street. They also foresaw that the traffic from north to south, crossing the vast traffic from east to west along the Strand, would constitute a serious problem. The new street is, therefore, designed to enable the northern traffic to ascend by the western arm of the crescent, while the southern traffic descends by the eastern arm. They foresaw that if some such scheme as this were not carried through a most serious attack would be likely to develop against Waterloo Bridge, owing to its inadequate width. This bridge is not only the most beautiful of London bridges, but its position in the centre of the great arc of the river with the background of Somerset House and the dome of St. Paul's, constitutes perhaps one of the finest architectural views in the world. Unfortunately, Waterloo Bridge was designed for a bygone generation, and is much too narrow to carry the traffic of the main line of communication between North and South London. The solution of this difficulty is thought by the Institute to lie in the construction of a new bridge across the Thames, between the Waterloo and the Blackfriars bridges.

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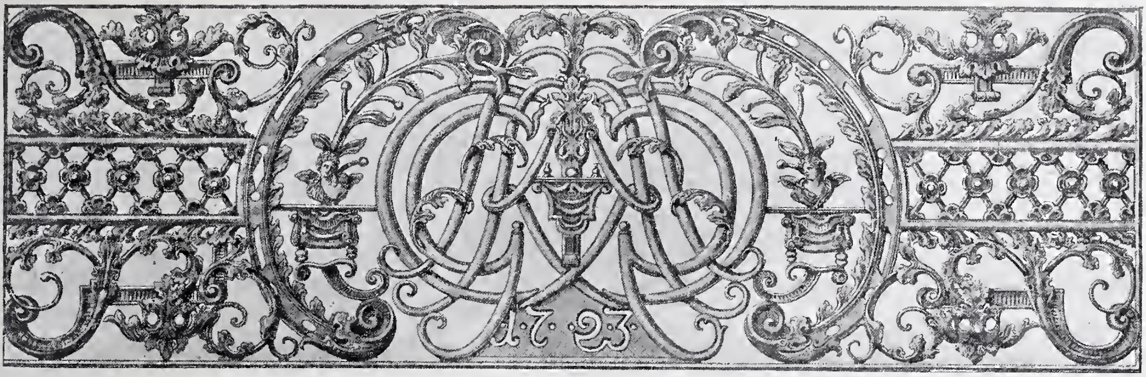
* This new street will be known by the name of "Kingsway," and the crescent by the name of "Aldwych."

9. *Future London.*—It would not seem that any very useful purpose would be served by indicating the lines upon which future London will develope. It must be largely a matter of conjecture, and though certain improvements are clearly only a matter of time, notably, perhaps, the continuation of the Mall into Trafalgar Square and the consequent widening of Whitehall, yet it is probable that the process in the future will be, as in the past, the outcome of immediate necessity. London still owns very many square miles of dreary squalor and misery, and the conversion of this great area into a beautiful city is indeed a Herculean task. Probably many centuries will have passed away before the poverty of London becomes only a matter of history. Still, it is remarkable what rapid strides in the obliteration of the slums are being made. During the last fifty years, whole districts of insanitary property have been swept out of existence and have been replaced by new and healthy dwellings designed with care and thought. There is a public school every few hundred yards, and public baths, gymnasia, libraries, museums, and art galleries are to be found in even the poorest districts. The younger generations are far better equipped than were their fathers to take up the question of civic organisation and to carry forward the movement for better and brighter homes.

Whether London has reached the limit of her population. Whether this extraordinary city is destined still to enlarge her boundaries. Whether the growth in power and influence of the great Western world is destined to divert commercial energy into new channels. These are questions too great for us. It may be that London will be forced to yield her place as the foremost city of the world to her younger and possibly more energetic competitor New York City. If this be the destiny of fate, I am sure that there is no city to whom London would more willingly yield the pre-eminence, and rejoice in so doing. At the same time it is necessary to state that London possesses vast stores of latent power, that her unrivalled geographical position still remains unchanged, and that, at the beginning of this twentieth century of her history, she is sufficiently confident of her commercial future to embark on schemes of commercial development which will involve an expenditure of hundreds of millions of dollars. Whatever may be the fate that the future has in store for London, however, the past will always remain her own, and I shall be content if this too brief and disconnected sketch succeed in awakening in the mind of the young American citizen some interest, if not some affection, for a city that is after all his *alma mater*.



IRON.—II.

ROYAL ACADEMY LECTURES 1903.—II.

By Professor Aitchison, R.A.

PAST PRESIDENT, ROYAL GOLD MEDALLIST.

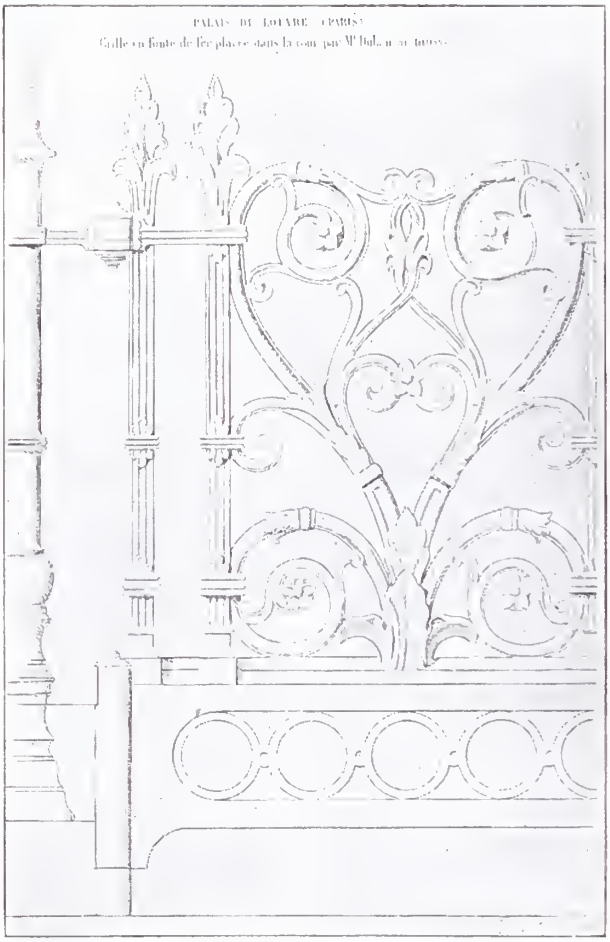
BOTH in America and England ironwork has often been very improperly used, a glaring instance of which we see in the Tower Bridge; and I think Mr. Eidlitz points out several cases where the supports of a building are of iron cased over with a Greek or Roman columnar design which has betrayed the architect into solecisms that are almost ludicrous. I have seen photographs of important buildings in an advanced state of progress which were then mere forests of iron columns, stanchions, and girders, but which when completed had their outside faces built in accordance with the necessities of stone or marble with which they were faced, thus in fact giving a false appearance to their real construction; and I have thought how much we must regret that these architects, very often men of genius, had not the inventive capacity to turn the ironwork into graceful and beautiful shapes.

At Pompeii we see plenty of instances of very slender shafts which might be made in iron if we could get an enamel that would not be too costly and would stand the changes of our climate. The enamelled plates of iron used for the names of streets and trade advertisements have mostly scaled, and the painting and gilding of them continually would end in a uniform coat of paint the colour of rusty iron.

Although St. Mark's is a Byzantine building, and therefore deals in arches and domes, I cannot help thinking that it might furnish us with some ideas for the use of iron. Even if we were unable to enamel it at a reasonable cost, we could hardly expect the enamel on the cast-iron columns to stand the wet and frost of a Venetian winter; but recesses of niche form might very well be made with ironwork and filled in with enamelled brick or glass mosaic, and the ironwork be Barffed, *i.e.* black.

My opinion is that any tendency this age may have towards structural beauty inclines towards elegant simplicity and an almost total absence of ornament. We know that this severity was the Greek view of architecture at its best epoch. A few guttæ, a carved egg-and-tongue, or a moulding enriched with the water-leaf or honeysuckle, comprised the whole architectural ornament as distinguished from figure sculpture. The Greeks took the position of the lioness in Æsop's fable in conference with the other animals who were boasting of the number of their children; she says: "I have only one child at a birth, but that is a lion." We want to analyse the causes that produce admiration in our minds when we look at a building, and having discovered them to try to apply the principles to the ironwork we have in hand. This knowledge will prevent us from going wrong, but we must be blessed with invention if we are to go right. It is not so difficult to make a structure sightly when we have cast-iron columns of any considerable size and cast-iron girders of small span; but when the girders are of wrought iron and of large span the difficulty is considerable, for the form they mostly take is that of a series of triangles strung at the bottom and top, or lattice-work.

In all former buildings, except in the Greek temples, the wall is the main feature of the outside; we can have a wall of plain wrought-iron plates, or ornamental cast-iron ones, but in neither case is the colour very pleasant, unless we can afford to enamel it, and I do not think that in situations exposed to damp enamelled iron stands well. We can, however, make iron black and preserve its face by the Barff process. But these objections are not the only ones, as iron plates are always on the move through variation of temperature, and are very cold or very hot according to the temperature of the air and the presence or absence of the sun's rays; and if we use brick, stone, or concrete for the walls between the ironwork, the outside of the building hardly shows that it is of iron construction. Perhaps we might make a feature of iron in this way: the supports might be small and grooved on each edge, and filled in with slabs of enamelled earthenware, or between the ironwork enamelled brickwork might be used, or plain brickwork covered with glass mosaic with a dark blue or gold ground. The black lines of the ironwork would then look well, something like half-timbering on a small scale.


PALAIS DU LOUVRE (PARIS)
Grille en fonte de fer placée dans la cour par Mr Duban architecte.

(From *L'Architecture Ferronnière.*)

I have often thought that a splendid hall ceiling might be made of cast-iron girders with smaller ones across forming a series of square panels filled in with red glazed earthenware domes enriched with gold. These small red domes might be made of the red glazed earthenware like bread-pans. In the hall of the Ecole des Beaux Arts on the Quay ornamental cast iron and terra-cotta are used.

There are many temporary iron buildings covered with corrugated iron, all hideous. Of pure iron buildings for habitation there are none that I know except lighthouses and iron casemates; all others are of glass and iron construction and of the greenhouse pattern, such as the Exhibition of 1851, the Crystal Palace, the French Exposition of 1889, together with the greenhouses at Kew, Chatsworth, and elsewhere; but though effective outlines may be got the glass makes the tone of the building leaden and heavy.

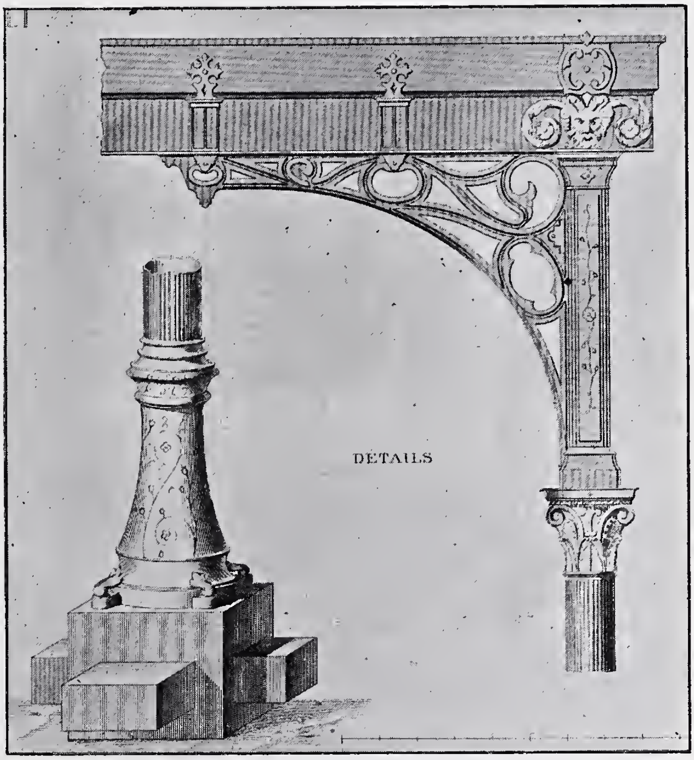
Markets and landing piers are often constructed of iron, and we all know the cast-iron spire of Rouen Cathedral, which may be considered as an illegitimate use of cast iron.

Iron, like other materials, is apt to bear upon its face the impress of other forms of construction: the arch is frequently shown in it, though perhaps this is not more ridiculous than wooden arches or wooden vaulting.

Gasometers are sometimes picturesque structures, and different examples show how iron may be so used as to be ridiculous and ugly, or appropriate and elegant. As an example of the former you see a series of attenuated cast-iron Roman Doric columns set in a circle round a gasometer, each column with its capital being connected at the top by thin pierced cast-iron girders occupying an inch or two of the middle of the projecting capital. But I have occasionally seen gasometers whose standards are made of wrought angle iron, and flat bar iron connected with picturesque iron ties, and I have seen a very elegant one where the standards are battered on the outside and made of heavy wrought-iron lattice-work held together at the top and midway by slight lattice girders.

When iron has been made to imitate the forms of stone or wood it merely excites our laughter and contempt, but it is interesting to see what architects have attempted in the way of elegance with iron.

I told you cast iron would take any shape you please: if you have skill enough you may make it so beautiful that it will not only delight the cultivated, but will be dreamed of; again, you can make it so hideous that it will haunt people like Frankenstein's monster, and this is the most common form.



(From *L'Architecture Ferronnière.*)

In England we have three classes: those of cultivated taste who admire beauty and will not do without it if they can help it, those who pretend to admire it and do not, and those who neither like nor pretend to like it, and shamelessly proclaim that beauty is all nonsense. Roughly speaking, the last class represents the age, more particularly so in regard to iron, because those whose architectural taste has been cultivated by the study of brick, stone, or marble look on iron as a makeshift which they would not use if they could help it. I do not say there is no elegant ironwork in England, for I have seen excellent specimens occasionally; but at the present moment I can only call to mind the ironwork, if it be not bronze, of the glass domes of the drawing office at the Bank of England, designed by Professor Cockerell, which, like all his work, is refined and elegant.

I must draw your attention to some very finely designed cast-iron work in the shape of railings at the Duke of Westminster's house in Park Lane. Sir Digby Wyatt endeavoured, in conjunction with Brunel, the great engineer, to do something original in the roofs of the Great Western Railway, but though it is a creditable attempt it is by no means one of those things of beauty which are a joy for ever.

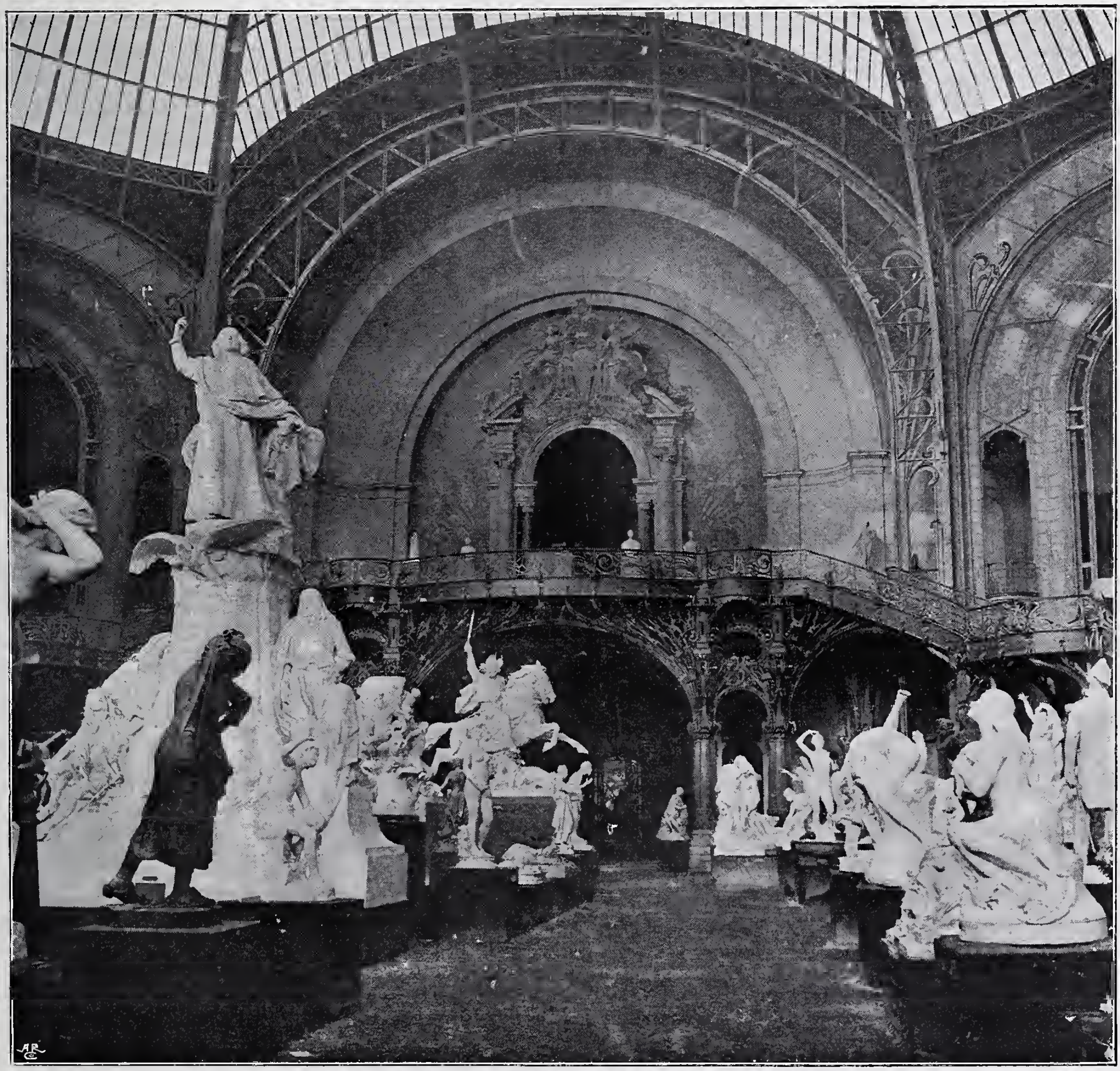
We all know Southwark Bridge, which is of cast iron, and one of the most graceful bridges that ever spanned a river. The open spandrels of the bridge, however, are filled in with a most commonplace pattern.

THE COLUMN OF JULY, PARIS.

In France and Belgium there is a greater demand for artistic work than in England, and I shall speak of the attempts made in those countries to develop the artistic treatment of iron.

You all know Victor Hugo's prophecy, after the event, that printing would kill Gothic architecture. The speaker, pointing from the printed book to Notre Dame, says: "That will kill this." Now hear the prophecy of another distinguished French writer, the late Monsieur Zola, who echoes Victor Hugo's words: "This will kill that," pointing from the ironwork of the Central Market to the stonework of St. Eustace. "Iron will kill stone, and the time is near. Since the beginning of this century only a single original monument has been built, a monument copied from nothing, which has sprung naturally from the soil of the epoch, and this is the Central Market, a swaggering work if you like, but which is only an attempted revolution of the twentieth century."

Most of you have seen the Central Market of Paris, called Les Halles Centrales. These buildings seem well adapted to their purpose, and have in fact served as models for markets in different parts of the world. I cannot think that this problem has been thoroughly solved by them: some of the details are good, but the buildings themselves exhibit a flatness and uniformity that are far from my notion of architectural beauty. As far as effects of light are concerned, the regular succession of skylights in the roof mars any grand effect of light and shade; the best part is the dark outline of the circular arch at the far end cutting against the light, though some of the work does credit to Monsieur Balthard's skill. There is, however, this to be said, that we do not want shambles to be beautiful. The ancients had this advantage over us, they professed that the sacrifice of innocent animals was an acceptable offering to their gods, just as the Peruvians did at their cannibal feasts; and doubtless much, if not most, of our ill-health arises from this habit of feeding upon slaughtered animals. The Romans conquered the greater part of the world on wheat-meal porridge, and the heaviest work in India is done by vegetarians.

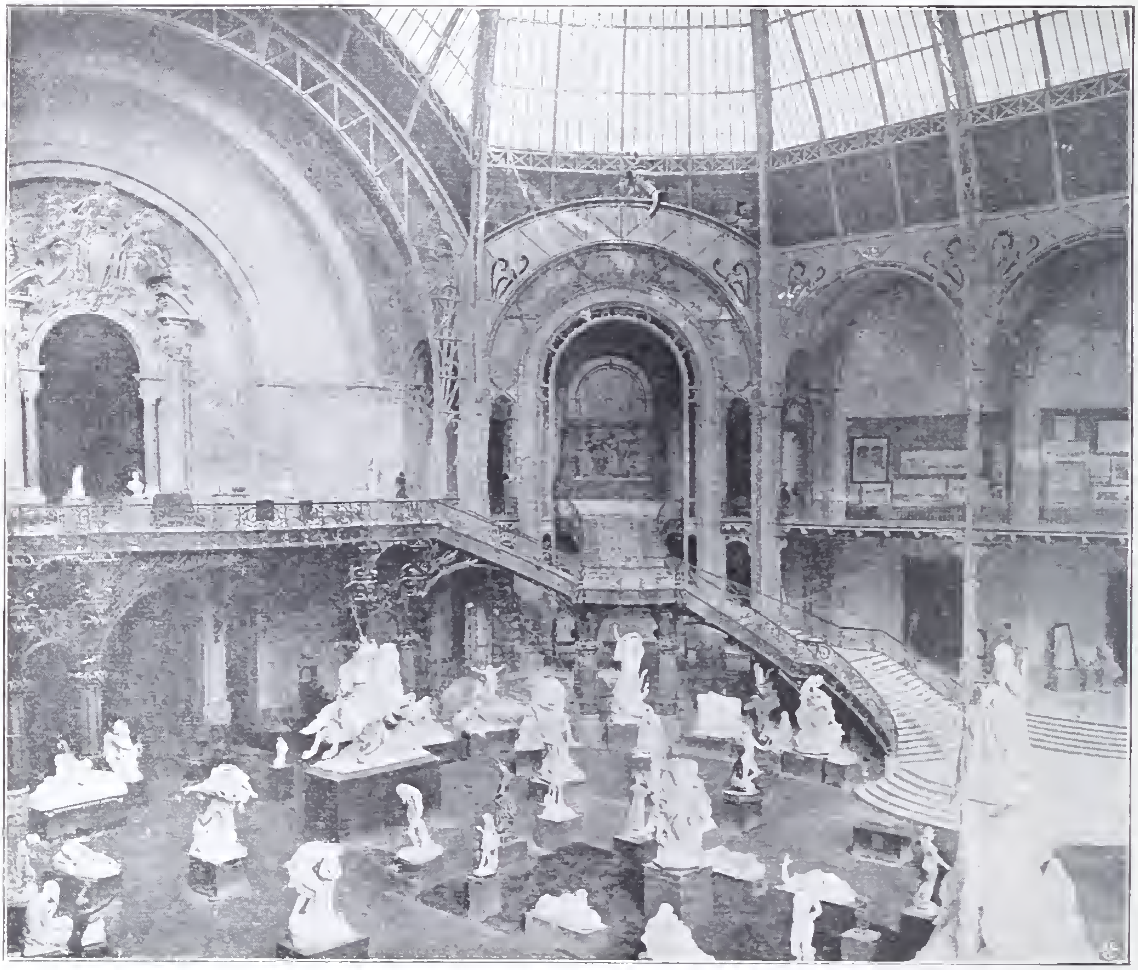


GRAND PALAIS DES BEAUX-ARTS, PARIS.

(From *Les Palais des Beaux-Arts*: Armand Guérinet, Paris.)

There are, however, splendidly successful works in Paris—as, for example, the inside of the Northern Railway station, by Hittorff, and the National Library, by Labrouste. The Northern Railway station is of grand proportions, about 225 feet wide, 600 feet long, and very lofty: it is divided in plan into a nave about 114 feet wide, and two aisles of 55 feet, twenty columns to each aisle, 32 feet from centre to centre, the last, next the line, being coupled. About this Northern Railway station there is one remark to make besides our admiration for Hittorff's work: the columns bear the inscription "Alston & Gourlay, Glasgow, 1862. British Iron Works." So you see Hittorff found the brains, and we found the labour and material.

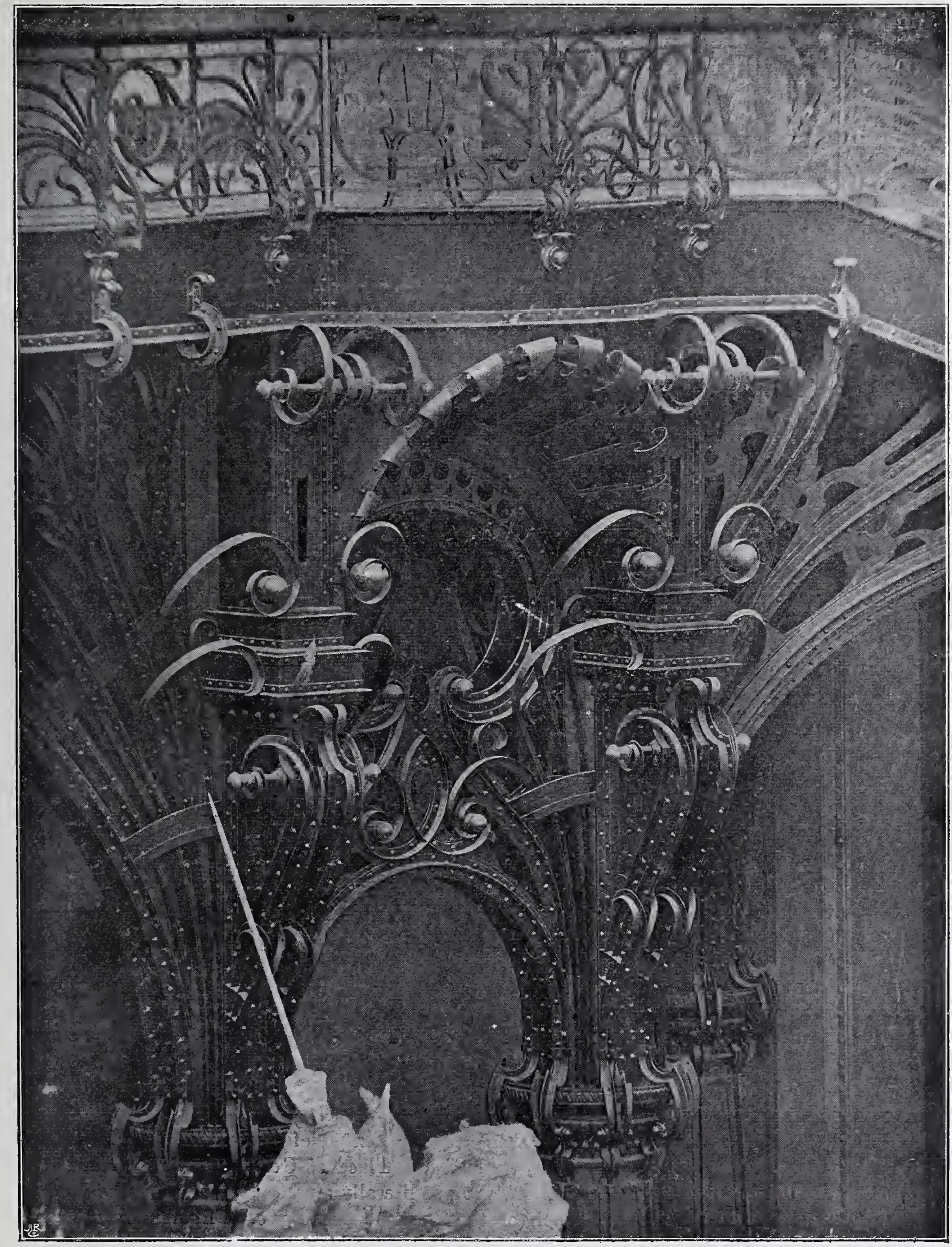
Labrouste's National Library is as agreeable a room as you would wish to see, and the cast-iron columns are elegant. The vast building for the sale of drapery close by the station of St. Lazare, called "Les Magasins de Printemps," built by the late Paul Sédille, has the whole of the interior of iron, and each external bay is wholly of glass, the framework being of cast iron, wrought iron, and bronze, enriched by gilding, marble, and mosaic. There is the Column of July in the Place de la Bastille by the late J. L. Duc, partly of cast iron and partly of bronze, and some of the lamp-posts in Paris are elegant.



GRAND PALAIS DES BEAUX-ARTS, PARIS.
(From *Les Palais des Beaux-Arts*: Armand Guérinet, Paris.)

There are some very original applications of wrought iron by Monsieur Louvet at the Grand Palais des Beaux-Arts, Paris.

In Belgium the Exchange at Antwerp has its central court covered in one span by wrought-iron trusses, and is glazed at the sides, the collar-beams carrying a plaster ceiling.



GRAND PALAIS DES BEAUX-ARTS, PARIS.

(From *Les Palais des Beaux-Arts* : Armand Guérinet, Paris.)

The wrought-iron bearers are treated after the manner of the wooden ones at Woolaton Hall, but the structural ironwork is so slight that it hardly forms a feature in the interior, while the wooden supports at Woolaton Hall form the characteristic feature of the design of the roof.

Considering the enormous use that is made of iron, and that this use will be greater in the future, it seems a pity that those architects who are blessed with invention do not devote the necessary time and thought to bringing iron buildings within the pale of architecture. As cast iron at least will take any form we please, it does not say much for the ambition of the English architects that they have taken so little trouble to study it. It is true that the fault cannot be wholly laid on the architects, for mankind, or at any rate English mankind, have decided that they do not care how hideous things are if they answer the purpose and cost little money: but by this the architects show a lamentable want of ambition, for instead of their being marked out as those who have raised the artistic status of the nation, they have tamely acquiesced in the general contempt of the fine arts. I hold out this prospect to any architect who is blessed with invention, and will devote himself to the study of iron and make it divinely beautiful, that he will be looked upon as one of the great improvers of his art and his nation, and a benefactor of every civilised country in the world.

Even common cast-iron work, unless much repeated, will hardly grow "the grain by which a man may live," and on ornamental ironwork he will simply starve; but will any architect who abounds in inventive genius be without that ambition of sacrificing himself for the glory of his art, his country, and the advancement of the human race? Homer is supposed to have been a beggar: Milton got the price of waste paper for his masterpiece *Paradise Lost*; and it is most likely that Burns got nothing for his most exquisite song, "Ye banks and braes o' bonny Doon." If it were not for this passion Nature has implanted in us to do the best things we can, man would still be in the monkey state: and we have the noble example of the men of science, who as a rule get nothing for the discoveries they make, but give them away. The chemist who discovered the solvent for indiarubber gave it to the manufacturers, and doubtless thousands have made colossal fortunes by it; but the discoverer is on a pinnacle that these wealthy men can never attain.

Thucydides makes Pericles say of the Athenians, "We love the beautiful," and we do not; so one of the great incentives is wanting to the great inventive architect.

It is odd that in the early times there was a passion for metal work—many of the Greek buildings of antiquity were at one time covered with brazen or copper plates—and we read that the interior of Phocion's house was covered with brazen plates, and I believe archæologists are of opinion that what is called The Treasury of Atreus was covered in the same way.

It has been suggested by some antiquaries that the whole interior of the dome of the Pantheon was covered with bronze plates inlaid with silver. There are the remains of some metal work round the eye, and Serlio in his book, which was published about the year 1544, shows the bronze covering of the girders of the portico of the Pantheon, and the arch over the entry is described as being of bronze inlaid with silver, all of which were melted down and used for Bernini's baldachino in St. Peter's. One of the best known accounts of metallic architecture is Homer's description of the Hall of Alcinous.

In Prescott's *Conquest of Peru* he speaks of the Temple of Cuzco that from its magnificence had received the name of "Coricancha" (the Place of Gold). "The interior of the temple was the most worthy of admiration. It was literally a mass of gold. On the western walls was emblazoned a representation of the Deity, consisting of a human countenance looking forth from amidst innumerable rays of light which emanated from it in every direction, in the same manner as the sun is often personified with us. The figure was engraved on a massive plate of gold of enormous dimensions, thickly powdered with emeralds and precious stones. It was so situated in front of the great eastern portal that the rays of the morning sun fell directly upon it at its rising, lighting up the whole apartment with an effulgence that seemed more than natural, and which was reflected back from the golden ornaments with which the walls and ceiling were everywhere encrusted. Gold, in the figurative language of the people, was 'the tears wept by the sun,' and every part of the interior of the temple glowed with burnished plates and studs of the precious metal. The cornice which surrounded the walls of the sanctuary was of the same costly material, and a broad belt or frieze of gold let into the stonework encompassed the whole interior of the edifice."

The gardens of the palaces of the Peruvian Incas had beds full of gold and silver flowers, said to have been admirably imitated from the natural ones.

I will now give you Homer's description of the Hall of Alcinous as translated and versified by Pope:—

The front appear'd with radiant splendours gay,
Bright as the lamp of night, or orb of day.
The walls were massy brass: the cornice high
Blue metals crown'd, in colours of the sky:
Rich plates of gold the folding doors incase;
The pillars silver, on a brazen base;
Silver the lintels deep-projecting o'er,
And gold, the ringlets that command the door.
Two rows of stately dogs on either hand,
In sculptured gold and labour'd silver stand.
These Vulcan form'd with art divine, to wait
Immortal guardians at Alcinous' gate;
Alive each animated frame appears,
And still to live beyond the power of years.

. . . .

Refulgent pedestals the walls surround,
Which boys of gold with flaming torches crown'd;
The polish'd ore, reflecting every ray,
Blazed on the banquets with a double day.

9, Conduit Street, London, W., *25th July* 1903.

CHRONICLE.

THE MIDSUMMER EXAMINATIONS.

Preliminary.

The Preliminary Examination, qualifying for registration as *Probationer R.I.B.A.*, was held in London and various provincial centres on the 9th and 10th June. 198 candidates were admitted, and claims for exemption from sitting for the examination were allowed to the number of 35. The remaining 163 candidates were examined, with the following results:—

District	Total Examined	Passed	Relegated
London	82	56	26
Birmingham	9	7	2
Bristol	13	7	6
Cardiff	4	4	0
Glasgow	3	3	0
Leeds	14	11	3
Liverpool	10	8	2
Manchester	21	16	5
Newcastle	7	5	2
	163	117	46

The passed candidates, with those exempted—numbering altogether 152—have been registered as Probationers. The following are their names and addresses:—

AINSWORTH: John Cooper; Springfield, Newton Moor, Hyde [*Master*: Mr. T. Brammall Daniel].

ALDRIDGE: Vernon; Chigwell School, Essex [Chigwell School].

ALLEN: John Gordon; Dashmonden, Holmdale Road, W. Hampstead, N.W. [Tonbridge School].

ASH: Arthur Stanley; Far Headingley, Leeds [*Master*: Mr. W. A. Hobson].

ASH: Sidney; Sheriff Hill Hall, High Fell, Gateshead [*Master*: Mr. J. H. Morton *].

ASHBY: Algernon Ralph; 19, Winchester Street, Basingstoke [*Masters*: Messrs. Wallis & Smith].

BADLAY: George Briggs; 6, Preston Terrace, Roundhay Road, Leeds [*Masters*: Messrs. H. H. Dyer, Son, & Winterburn].

BAWDEN: Cornelius Robert; Kelvin, Camden Road, Carshalton, Surrey [*Master*: Mr. F. W. Hingston].

BEAN: George William Harrison; Formby House, The Park, Hull, Yorkshire [*Master*: Mr. B. S. Jacobs].

BECK: Allan; c/o A. B. Plummer, Esq., 13, Grey Street, Newcastle-on-Tyne [*Master*: Mr. A. B. Plummer *].

BESWICK: Alfred Edward; Westlecott Road, Swindon [*Master*: Mr. R. G. Beswick].

BIRCH: John Godfrey, B.A.Oxon; Corville, Chester [University College, Liverpool].

BLACKBURN: Robert Herbert; 8, Fairbank Road, Manningham, Bradford [*Masters*: Messrs. Thomas Barker & Son].

BLAIR: Arthur Athol; 15, Selbourne Road, Douglas, Isle of Man [*Masters*: Messrs. George & W. R. Kay].

BOWIE: George Pygram; 80, Sarsfield Road, Balham, S.W. [*Master*: Mr. E. Prioleau Warren].

BRACE: Henry Edwin; 66, Wood Vale, Forest Hill, S.E. [Sidcup College, Kent].

BRADFIELD: Horace Henry; 58, Victoria Road, Clapham Common, S.W. [*Masters*: Messrs. St. Aubyn * and Wadling *].

BRADFORD: George Sydney Herbert; St. Angelo's, Bray, co. Wicklow, Ireland [*Masters*: Messrs. Carroll * & Batchelor *].

BRICKNELL: Thomas Mortimore; 22, Richmond Gardens, Shepherd's Bush, W. [*Master*: Mr. A. L. Guy *].

BROMLEY: Harold; 4, Bouverie Place, Folkestone [Felsted School].

BROWN: Alexander Wood Graham; 3, Chester Street, Edinburgh [Edinburgh Academy].

BROWNRIGG: Annesley Harold; 197, East Dulwich Grove, East Dulwich, S.E. [*Masters*: Messrs. Ernest George * & Yeates *].

BUCK: Henry Adolphus; 76, Avenue Road, Acton, W. [*Master*: Mr. Edward Monson *].

BURRAGE: Cecil; Clifton House School, Eastbourne [Clifton House School].

CAMINESKY: Peter; 64, Stocks Street, Cheetham, Manchester [*Master*: Mr. George E. Halliday *].

CARTAAR: Edward John; Beaconsfield, Kew Green, Surrey [*Master*: Mr. H. J. Wise *].

CASEMENT: Robert James; 30, Hemstal Road, West Hampstead, N.W. [*Master*: Mr. E. E. Fetch *].

CHAPMAN: Hugh Wallis; 130, Inverness Terrace, W. [*Master*: Mr J. Wallis Chapman].

CHARLES: Herbert Leslie; Governor's House, H.M. Prison, Hereford [*Master*: Mr. W. W. Robinson].

CHRISTIEN: Reginald Rayner; 36, Bolton Road, Farnworth, nr. Bolton [*Masters*: Messrs. Potts,* Son,* & Hennings *].

CLARK: Charles Walter; Grimston House, Houndiscombe Road, Plymouth [*Master*: Mr. H. J. Snell].

CLARK: John Percy; 4, Lea Brook Road, Ocker Hill, Tipton, Staffs. [*Master*: Mr. J. G. Nicholls].

COGHLAN: Francis James; 3, Grafton Terrace, Ashford Road, Cheltenham [*Masters*: Messrs. Prothero * & Phillott].

COLLCUTT: Bertie Hawkins; 5, Farndon Road, Oxford [*Masters*: Messrs. R. C. Davy & Stephen Salter *].

COOPER: Robert Stephen; Glengarry, Ellenslea Road, St. Leonard's-on-Sea [*Master*: Mr. Philip H. Tree *].

COPE: George Arnold; Croft House, Ashbourne Road, Derby [*Masters*: Messrs. Naylor * & Sale].

COPE-PROCTOR: Charles William; 70, Pembroke Road, Clifton, Bristol [*Master*: Mr. G. H. Oatley *].

CORNEY: John William; 3, Craven Terrace, Settle [Technical Institute, Settle].

COTTERELL: Arthur Naish; 207, Redland Road, Bristol [Merchant Venturers' College, Bristol].

COULSON: Richard Carte; 41, Grove Park, Denmark Hill, S.E. [St. Wilfrid's School, Bexhill].

COXALL: Charles; 15, Blenheim Street, Chelsea, S.W. [*Masters*: Messrs. J. T. Wimperis * & Arber *].

CRAMPTON: Alfred; 59, Belmont Street, Southport [*Master*: Mr. G. S. Packer].

CRAUFORD: William Harold; Kingscliffe, 3, Woodberry Down, Finsbury Park, N. [University College School].

CUNNINGHAM: Andrew; 8, Markham Square, Chelsea [*Master*: Mr. J. Macvicar Anderson *].

CUNNINGHAM: William Wyllie; c/o James Salmon & Son, 53, Bothwell Street, Glasgow [*Masters*: Messrs. James Salmon * & Son].

CURPHEY: Charles Edwin; Alexandra Road, Douglas, Isle of Man [*Masters*: Messrs. G. & W. R. Kay].

DAFT: William Austin; Gregory Street, Lenton, Nottingham [*Master*: Mr. Arthur Marshall *].

DALRYMPLE: Hugh Alexander; 44, Leamington Terrace, Edinburgh [*Master*: Mr. Morham].

DALTON: Percy; 22, Railway Walk, Birkdale, nr. Southport [*Master*: Mr. Gilbert Wilson].

DAWSON: Ernest Greenwood; Wykeham House, Barking [*Master*: Mr. C. J. Dawson *].

DIXON: Reginald Arthur; 72, Great Barr Street, Birmingham [*Masters*: Messrs. Oliver, Floyd & Salt].

DOLMAN: Lewis John; High Street, Repton, nr. Burton-on-Trent [*Master*: Mr. Thomas Jenkins].

DOVASTON: John; 14, Madeley Road, Ealing, W. [Ealing Art and Science Classes].

DUNNAGE: Gerald Eckett; 44, Ovington Street, Walton Street, Chelsea, S.W. [*Master*: Mr. Oldrieve].

ELKINGTON: Hylton Basil; c/o Messrs. Lawson & Reynolds, Yelverton Chambers, Bournemouth, Hants [*Masters*: Messrs. Lawson & Reynolds].

FAIRHEAD: Hubert Alan; Riverside, Enfield, Middlesex [*Master*: Mr. W. Gillbee Scott *].

FIDDAMAN: William Alfred Masters; Alkerton, 17, South Norwood Hill, S.E. [King's College].

FILKINS: Edwin William; Kevingtown, St. Mary Cray, Kent [Architects' Department, School Board for London].

FRY: Cyril Howard; Glenfield, Freehold Road, Ipswich [*Masters*: Messrs. W. Eade * and E. T. Johns].

GILBERT: Henry Bryan; Burghley, 45, Alexandra Road, Reading [*Masters*: Messrs. Joseph Morris & Son *].

GILKS: Stephen Langton Clowes; 9, Carlton Road, Putney, S.W. [St. Paul's School].

GORELY: Frank Henry Victor; 42, High Street, Sittingbourne, Kent [Wreight's School, Faversham].

GORRINGE: Wilfred Stuart; Chyngton, Seaford, Sussex [Manor House School, Clapham].

GREEN: Leonard Withers; 4, Wardrobe Place, Doctors' Commons, E.C. [*Masters*: Messrs. Rowland Plumbe * & Harvey].

GUTHRIE: William [of Dunblane, Scotland]; 10, Royal Avenue, Chelsea, S.W. [High School, Stirling].

HALLAM: Edward George; 53, Hartwood Road, Southport [*Master*: Mr. F. W. Finchett].

HALLIDAY: William Græme; Grove House, Cheadle-Hulme, Stockport [*Masters*: Messrs. Mangnall & Littlewood *].

HANDS: Garnet Joseph; Cotswolde, Warwick Road, Olton, Birmingham [*Masters*: Messrs. Henman * & Cooper *].

HARLEY: David Livingstone; Bythorne, Blantyre [*Master*: Mr. Alex. Cullan *].

HARRAL: William Haigh; 190, Queen's Road, Clarendon Park, Leicester [*Masters*: Messrs. Draper & Walters].

HARVEY: David; 79, Ella Street, Newland Avenue, Hull [*Master*: Mr. T. Denton Brooks *].

HAYMES: Richard Evered; 23, Stanley Place, Leam Terrace, Leamington [*Master*: Mr. Foster].

HEALING: John Burton; 197, East Dulwich Grove, S.E. [*Master*: Mr. Arthur Keen].

HENDERSON: Andrew Graham; c/o Messrs. Macwhannell & Rogerson, 58, West Regent Street, Glasgow [*Masters*: Messrs. Macwhannell & Rogerson *].

HEPPENSTALL: Noel; Holmefield, Milnsbridge [*Master*: Mr. John E. Lunn].

HIGGINS: Arnold Lawrence; Mildred House, Bradford Yorks [Bradford Grammar School].

HIGGINS: Henry Usticke Maximilian; 3, North Grove, Highgate, N. [*Master*: Mr. R. H. Hill *].

HOLDER: Arthur Daniel; 50, Holderness Road, Hull [Hymer's College, Hull].

HOLGATE: Percy; Oldfield Avenue, Darwen [*Masters*: Messrs. Briggs & Wolstenholme *].

INGHAM: Francis Ernest; 8, West Parade, Rhyl [*Master*: Mr. Foulkes].

JEEVES: Leonard Lambert Garnet; 35, Compton Road, Canonbury, N. [*Masters*: Messrs. Lucas * & Stratton *].

JENKINS: Albert Henry Hopkin; Junction Hotel, Blackmill, nr. Bridgend [*Masters*: Messrs. Cook & Edwards].

JONES: Lewis Farewell; Brinley, Common Side, Mitcham, Surrey [*Master*: Mr. H. R. Thomson].

JONES: Norman; 38, Knowsley Road, Southport [*Master*: Mr. Henry Jones].

KAY: Albert; 145, Broad Street, Pendleton [*Master*: Mr. John Holt].

KENNEDY: Oliver Henry; R.A.C. Depôt, Grosvenor Road, S.W. [*Masters*: Messrs. Macintosh & Newman].

KERR: Walter; 22, Upper Richmond Road, Putney, S.W. [*Master*: Mr. T. E. Collcutt *].

KING: Frederick Cross; Ardvara, Cuttra, co. Down, Ireland [*Masters*: Messrs. Graeme Watt & Tulloch *].

LAIN: Percy Edgar Cyril; 8, Oakley Square, N.W. [*Master*: Mr. W. Howard Seth-Smith *].

LEYBOURNE: Malcolm; 10, Ogle Terrace, South Shields, Durham [*Master*: J. W. Donald *].

LINDLEY: John; Woodfield, Alexandra Road, South Whalley Range, Manchester [*Masters*: Messrs. J. Earnshaw * & Son].

LITTLEWOOD: John; 162, Stamford Street, Manchester [*Masters*: Messrs. Mangnall & Littlewood *].

LIVOCK: Stanley Gage; Lyndhurst, 128, Unthank Road, Norwich.

LLOYD: Frederick Luttley; Bankside, Victoria Road, Swindon [*Master*: Mr. R. J. Beswick].

McDONNELL: Reginald Edwardes; 14, Thorburn Road, New Ferry Park, New Ferry, Cheshire [*Master*: Mr. Hugh A. Matear *].

McNICOL: John; 8, Park Terrace, Stockton-on-Tees, co. Durham [*Masters*: Messrs. J. M. Bottomley, Son, & Wellburn].

MAKINS: Clifford Copeman; Westhorpe, Harrow [*Master*: Mr. Horace Field *].

MALTBY: Charles Burton; 12, Newtown Street, Southfields, Leicester [*Masters*: Messrs. Langley & Baines].

MANSFIELD: Leslie; Firwood, Frant Road, Tunbridge Wells [King's School, Canterbury].

MATHESON: Kenneth William; Orcadia, Goulton Road, Clapton, N.E. [*Master*: Mr. Leonard V. Hunt *].

MATTINSON: Malcolm Dacre; 29, Derby Road, Weaste, Manchester [*Master*: Mr. Arthur Mattinson].

NASH: Thomas Stanley; 78, Wrottesley Road, Plumstead [*Master*: Mr. Frank Sumner].

NORMAN: Edward John; Judde House, Tonbridge, Kent [Tonbridge School].

NOTT: George; 8, Market Street, Leicester [*Masters*: Messrs. Goddard * & Co.*].

OWEN: Henry Ernest; Orme View, Menai Bridge, Anglesey [*Master*: Mr. Jos. Owen].

PACE: Charles Lancashire; Moorland Bank, Wilmslow Road, Didsbury [Owens College, Manchester].

PADFIELD: Albert Sanders; 67, Cathedral Road, Cardiff [*Master*: Mr. George Thomas *].

PARK: John; 5, Archery Street, Blackman Lane, Leeds, Yorks [*Masters*: Messrs. H. H. Dyer, Son & Winterburn].

PARRY: Bertram Leigh; Woodlands, Poulton-le-Fylde, Lancashire [*Master*: Mr. T. G. Lumb].

PELLING: Arthur Fawkener; 68, Gilesgate, Durham [*Master*: Mr. Wm. Crozier].

PENFOLD: John Thomas; 13, Studland Street, Hammersmith, W. [*Masters*: Messrs. Roumieu * & Aitchison *].

PHILLIPS: Aubrey Wyndham; 4, Gorse Lane, Swansea [*Masters*: Messrs. J. P. Jones & Rowlands].

POLEY: Arthur Frederick Edward; Willowbank, Hampton Hill, Middlesex [*Master*: Mr. E. W. Poley *].

POLLARD: Joseph, jun.; 213, Preston New Road, Blackburn [*Master*: Mr. Walter Stirrup].

QUITTENTON: John Allen; Sunny Bank, Warlingham, Surrey [*Master*: Mr. R. A. Crowley *].

RICHARDS: Harold Beckwith; 34, Hill Street, Garnet Hill, Glasgow [*Master*: Mr. J. Lindsay *].

RILEY: William Henry; 98, St. Saviour's Road, Leicester [*Master*: Mr. F. Seale].

RIPPON: Herbert; 29, Mercer's Road, Tufnell Park, N. [*Master*: Mr. Robert Sawyer *].

ROBERTS: Thomas Leonard; Barry Lodge, Woodside, Wimbledon [*Master*: Mr. H. M. Wakley].

RODD: Burnell Hubert Trebartha; Sunnyside, Camden Avenue, Feltham [King's College].

ROSS: Launcelot Hugh; 6, Ferryhill Place, Aberdeen, N.B. [*Master*: Mr. John Rust].

ROYDS: Alan Francis; Brizes Park, Brentwood, Essex [*Masters*: Sir Arthur Blomfield & Sons *].

RUSBRIDGE: Arthur; 142, Oxford Road, Reading, Berks [*Master*: Mr. W. G. Lewton].

SHEPHARD: John Ruskin; 24, Princes Avenue, Hull [Hymer's College, Hull].

SHORTEN-STEARN: Edward; Westlyn, Norwich Road, Ipswich [Northgate School, Ipswich].

SICKELMORE: Arthur; 13, Blomfield Road, Shepherd's Bush, W. [Regent Street Polytechnic].

SMITH: Cecil Horace; 3, Coburgh Road, Mapperly, Nottingham [*Master*: Mr. John Howitt *].

SPAIN: Harry Selwyn; 36, Great Ormond Street, W.C. [*Master*: Mr. J. E. Spain *].

STAHL: Max Edward; Westfield, Uphill, Weston-super-Mare [*Masters*: Messrs. Price & Jane].

TEMPLE: Thomas; 107, Gilmore Place, Edinburgh [*Masters*: Messrs. Sydney Mitchell & Wilson].

THOMAS: Charles Stanley; The Rhyddings, Neath, S. Wales [*Master*: Mr. J. C. Rees].

TICKLE: Arthur George Warnham; 35, Linden Avenue, Kensal Rise, W. [*Master*: Mr. Max. J. Zimmermann].

TOMLINS: Edmund Frazer; 28, Hemstall Road, West Hampstead, N.W. [*Master*: Mr. Sidney B. Caulfield].

TRAVIS: Fred; Clovelly, Clifton Drive, Lytham [*Master*: Mr. F. W. Dixon].

TURNER: Jessett Stenson; 8, Hardy Road, Westcombe Park, Blackheath, S.E. [*Master*: Mr. Roberts].

TWIZELL: George Sterling; 8, Larkspur Terrace, Newcastle-on-Tyne [*Masters*: Messrs. Hicks & Charlewood *].

VAUSE: Harold; West Cliff Station, Whitby, Yorks. [*Master*: Mr. E. H. Smales *].

WAGHORN: Sydney Stanley; 10, Pemberton Gardens, Upper Holloway, N. [*Master*: Mr. Leonard V. Hunt *].

WALTON: Leonard Webb; c/o A. Marshall, Esq., King Street, Nottingham [*Master*: Mr. Arthur Marshall *].

WEST: Arthur Smith; 71, West Cliffe Terrace, Harrogate [*Master*: Mr. W. H. Hopkinson].

WHEATLEY: Arthur; 29, Gawber Road, Barnsley [*Masters*: Messrs. Wade & Turner].

WHITAKER: Vivian Stanworth; c/o Messrs. Shaw & Vowles, 69, St. James Street, Burnley, Lancs. [*Masters*: Messrs. Shaw * & Vowles *].

WHITE: John Parish; The Pyghtle, Bromham Road, Bedford [*Master*: Mr. E. Wimperis *].

WHITEHEAD: William; 79, Harehills Avenue, Leeds [*Master*: Mr. Alfred Whitehead].

WHITNEY: Eustace Scott; Woolverstone, 21, Nicosia Road, Wandsworth Common, S.W. [*Master*: Mr. E. R. Barrow *].

WHITTAKER: David; 154, Boundary Road, St. Helens, Lancs. [Cowley Middle School].

WOOD: Cecil Walter; Gloucester House, 19, Charing Cross Road, W.C. [*Master*: Mr. Frederick Strouts,* Christchurch, N.Z.].

WRIGHT: Edward Leslie; 77, Loughborough Road, West Bridgford, Nottingham [*Master*: Mr. T. Wright].

WRIGLEY: Harold Lawson; Wollescote Lye, near Stourbridge [*Masters*: Messrs. John A. Grew & Edwards].

WYLD: Robert Stodart Balgarnie; 32, Muswell Road, Muswell Hill, N. [A. A. Day School].

WYLLIE: William Barnet; 104, High Holborn, W.C. [*Masters*: Messrs. Niven * & Wigglesworth *].

YEO: Samuel Arthur Spear; 40, Church Road, St. Thomas's, Exeter [*Master*: Mr. J. A. Lucas].

YOUNG: John Girtrig; Ashburn, Alloa, N.B. [*Masters*: Messrs. Kerr & McCulloch].

The asterisk (*) denotes members of the Institute.

Intermediate.

The Intermediate Examination, qualifying for registration as *Student R.I.B.A.*, was held in London and the undermentioned provincial centres on the 9th, 10th, 11th, and 12th June. 119 candidates were examined, with the following results:—

District	Number Examined	Passed	Relegated
London	87	34	53
Bristol	5	3	2
Glasgow	4	3	1
Leeds	10	5	5
Manchester	13	5	8
	119	50	69

The passed candidates, who have been registered as Students, are as follows, the names being given in order of merit as placed by the Board of Examiners:—

HALLIDAY: James Theodore [*Probationer* 1901]; 1, Barlow Street, Oldham [*Master*: Mr. Thomas Taylor].

REID: James [*Probationer* 1901]; Beechwood Terrace, Dalmarnock, Glasgow [*Master*: Professor Charles Gourlay *].

MARKHAM: John Hatton [*Probationer* 1900]; 23, Primrose Hill Road, N.W. [*Masters*: Messrs. Clare & Ross *].

BAGOT: Walter Hervey [*Probationer* 1901]; Queen Anne's Mansions, S.W. [*Master*: Mr. E. J. Woods *].

RYLATT: Walter Puckering [*Probationer* 1901]: Sculcoates House, Beverley Road, Hull [*Master*: Mr. T. B. Atkinson].

BROWN: Baldwin [*Probationer* 1900]; 19, Leamington Street, Bradford, Yorks. [*Master*: Mr. Jas. Ledingham *].

WILKINSON: Leslie [*Probationer* 1901]; 3, Ravensbourne Gardens, West Ealing, W. [*Masters*: Messrs. Wm. Wallace & Gibson *].

SANTO: Victor George [*Probationer* 1901]; The Crescent, Bromsgrove [*Masters*: Messrs. J. A. Chatwin * & Son].

SAXELBYE: Harold F. [*Probationer* 1902]; The Park, Hull [*Master*: Mr. B. S. Jacobs].

WILLIAMS: Geoffrey Hyde [*Probationer* 1898]; 19, Charing Cross Road, W.C. [*Master*: Mr. J. W. Cocking].

PHILLIPS: George Edward [*Probationer* 1901]; Tenison Lodge, Cambridge [*Master*: Mr. T. D. Atkinson *].

McDERMOTT: Walter Kingsley [*Probationer* 1900]; Borough Green, Kent [*Master*: Mr. Hubert Bensted *].

PINSENT: Cecil Ross [*Probationer* 1901]; 16, Maresfield Gardens, Hampstead, N.W. [*Masters*: Messrs. Wm. Wallace & Gibson *].

SEARLE: Norman Odell [*Probationer* 1897]; 35, Macaulay Road, Clapham Common, S.W. [*Masters*: Messrs. Searle * & Hayes *].

CROSBIE: Lawrence Stanley [*Probationer* 1895]; 24, Benedict Road, Brixton, S.W. [*Master*: Mr. Eugene C. Beaumont].

HILL: Alfred [*Probationer* 1902]; 11, Thornton Lodge Road, Huddersfield [Huddersfield Municipal Technical College].

PROCTER: John Clifford [*Probationer* 1899]; Rowangarth, Benrhydding, Yorks. [*Master*: Mr. W. H. Thorp *].

SEARLE: Sydney [*Probationer* 1899]; Sudbury Priory, Harrow, Middlesex [*Master*: Mr. Frederick Wheeler *].

FARMER: James Westbrook [*Probationer* 1899]; 69, Pulteney Road, South Woodford, Essex [*Master*: Mr. F. W. Tasker *].

SULLIVAN: Leo Sylvester [*Probationer* 1898]; Embankment Chambers, Villiers Street, W.C. [*Master*: Messrs. Alfred Waterhouse * & Son *].

JENKINSON: David Barnes [*Probationer* 1902]; "Holmesfield," Kimberworth, Rotherham [*Master*: Mr. Charles Hadfield *].

HASTEWELL: Robert Edwin [*Probationer* 1901]; The Grange, Haltwhistle, Northumberland [*Master*: Mr. H. Higginson].

MOSS: Sydney [*Probationer* 1900]; Rock Bank, Eccles [*Master*: Mr. J. W. Beaumont *].

HILL: Samuel Woods [*Probationer* 1901]; 13, Queen's Rd., Finsbury Park, N. [*Master*: Mr. Thomas W. Cutler *].

MORRAN: Henry Stanley (New Zealand) [*Probationer* 1901]; 45, Herbert Road, Plumstead, S.E. [Polytechnic, Regent Street].

WHITTINGTON: Herbert Hodges [*Probationer* 1900]; Council Offices, Buckhurst Hill, Essex [*Master*: Mr. H. Tooley *].

MILNE: David [*Probationer* 1902]; 11, Ladywell Place, Victoria Road, Dundee [*Master*: Mr. W. E. Riley *].

DOD: Edwin James [*Probationer* 1901]; 24, Liverpool Road, Birkdale, Southport [*Master*: Mr. James Dod].

LEMAITRE: William Courtenay [*Probationer* 1902]; 31, Panton Street, S.W. [*Master*: Mr. Percy Green *].

O'CONNOR: Dominic M., B.A., B.E. [*Probationer* 1901]; 11, Aynhoe Road, Brook Green, West Kensington [*Master*: Mr. W. H. Harrison *].

MARR: William Percy [*Probationer* 1897]; Kingsbridge, South Devon [*Master*: Mr. T. W. Latham].

SMITH: James [*Probationer* 1895]; 27, Blythswood Drive, Glasgow [*Master*: Mr. John B. Wilson *].

HOLLIS: Henry Clifford [*Probationer* 1902]; Montpellier, 115, Brecknock Road, N. [*Master*: Mr. C. G. Baker].

BURGOINE: Stephen [*Probationer* 1900]; 1, Kennington Park Gardens, S.E. [*Master*: Mr. R. G. Hammond].

CLOUTING: Charles Emerson [*Probationer* 1900]; Norfolk House, Hartington Grove, Cambridge [*Master*: Mr. A. P. Macalister *].

DANIEL: Arnold Frost Hood [*Probationer* 1899]; Henbury, Glos. [*Master*: Mr. George H. Oatley *].

EARNSHAW: Harold Hicks [*Probationer* 1900]; 4, Chapel Walks, Manchester [*Master*: Mr. J. R. Earnshaw *].

EATON: Charles William [*Probationer* 1901]: 23, Mecklenburgh Street, Leicester [*Masters*: Messrs. Goddard * & Co.*].

EVANS: William Heather [*Probationer* 1900]; 8, Portland Street, Southampton [*Master*: Mr. E. W. Evans].

HENDERSON: John Louis [*Probationer* 1901]: 50, Montpelier Park, Viewforth, Edinburgh [*Masters*: Messrs. Hay & Henderson].

HILLYER: William Harold [*Probationer* 1899]; Lyncroft, Shortlands Road, Shortlands, Kent [*Master*: Mr. Aston Webb, R.A.*].

KEYS: Percy Hubert [*Probationer* 1901]; 69, Chesterfield Gardens, Harringay, N. [Architects' Department, London County Council].

PHILLIPS: Louis Augustus [*Probationer* 1896]; Rhosmer, Gold Tops, Newport, Mon. [*Masters*: Messrs. Habershon, Fawckner & Groves].

ROBERTS: Haydn Parke [*Probationer* 1899]; 64, Coniger Road, Parson's Green, Fulham, S.W. [*Master*: Mr. W. E. Riley *].

SCOTT: Harold Seymour [*Probationer* 1900]; 19 Lansdown Road, Handsworth, Birmingham [*Master*: Mr. Matthew J. Butcher].

STENNER: William James [*Probationer* 1901]; City Engineers' Office, 63, Queen's Square, Bristol [*Masters*: Messrs. R. M. Drake & Pizey].

STONEHOUSE: Charles [*Probationer* 1900]; Adelaide Terrace, Blackburn [*Masters*: Messrs. Briggs * & Wolstenholme *].

WALKER: Ewart G. [*Probationer* 1901]; "The Avenue," Church Road, Upper Norwood, S.E. [*Master*: Mr. George Lethbridge *].

WHEATLY: Reginald Francis [*Probationer* 1901]; "Nettlestead," Bromley, Kent [*Master*: Mr. Leonard Stokes *].

WILSON: Allen Woodward [*Probationer* 1900]; "Brinkdale," Park Road, Peterborough [*Master*: Mr. Wm. Boyer].

The asterisk (*) denotes members of the Institute.

Final.

The Final and Special Examinations, qualifying for candidature as *Associate R.I.B.A.*, were held in London from the 26th June to the 3rd July. Of the 55 candidates * examined, 22 passed, and the remaining 33 were relegated to their studies. The successful candidates are as follows:—

ARCHER: Edward Percy [*Probationer* 1897, *Student* 1901]; Fairlea, Etchingham Park Road, Church End, Finchley, N.

* AYRTON: Ormrod Maxwell [*Special Examination*]; 28, Theobald's Road, W.C.

BATTLEY: Henry Arthur [*Probationer* 1894, *Student* 1895]; Engineers' Office, L. B. & S. C. Railway, London Bridge, S.E.

BEE: Thomas James [*Probationer* 1894, *Student* 1898]; Heath View, Sidcup, Kent.

BILL: Harry Thomas [*Probationer* 1898, *Student* 1899]; 6, Cherry Street, Birmingham.

BLACK: Herbert [*Probationer* 1900, *Student* 1901]; Sussex House, Kensington Park Road, Notting Hill, W.

CARTER: William Alfred Thomas [*Probationer* 1898, *Student* 1902]; 66, Richmond Road, Bayswater, W.

* Six of these candidates entered for the Special Examination, which is for architects in practice not less than twenty-five years of age, and chief assistants over thirty. Such candidates are exempted by special resolution of the Council from the Preliminary and Intermediate Examinations, and from submitting "Testimonies of Study." Three of these special candidates passed; an asterisk is prefixed to their names in the above list.

CHURCH: Guy [*Probationer* 1898, *Student* 1900]; Fareigh View, Warlingham, Surrey.
* CLARKE: John Daniel [*Probationer* 1897, *Student* 1902]; 84, Lancaster Road, Notting Hill, W.
COUCH: William Edward [*Probationer* 1897, *Student* 1899]; 25, Linden Gardens, Bayswater Road, W.
DANNATT: Percy Boothroyd [*Probationer* 1897, *Student* 1901]; Lyndale, Blackheath, S.E.
DAVEY: Henry Edmund [*Probationer* 1892, *Student* 1894]; Rotherwood, Ivanhoe Road, Denmark Park, S.E.
GALL: Robert Robb [*Probationer* 1898, *Student* 1899]; 10, Loanhead Terrace, Aberdeen, N.B.
GREEN: Jordan [*Probationer* 1900, *Student* 1901]; 33, South Road, Handsworth, Birmingham.
GREEN: Thomas Frank [*Probationer* 1893, *Student* 1898]; 12, Richborough Road, Cricklewood, N.W.
JOSEPH: Ernest Martin [*Probationer* 1899, *Student* 1899]; 45, Finsbury Pavement, E.C.
LACEY: Albert Edward [*Probationer* 1895, *Student* 1898]; 13, North Street, Ashford, Kent.
RICHARDS: Thomas Edgar [*Probationer* 1900, *Student* 1902]; Tynewydd, Barry, South Wales.
* SIMPSON: Tom [*Special Examination*]; 4 Queen Street Place, E.C.
SMITH: Harold Bayldon [*Probationer* 1896, *Student* 1902]; 17, Woburn Place, Russell Square, W.C.
WARWICK: Septimus [*Probationer* 1897, *Student* 1902]; 98, Lancaster Road, North Kensington, W.
WYLIE: Richard [*Probationer* 1900, *Student* 1901]; 20, Wilberforce Terrace, Gateshead.

The following table shows the number of failures in each subject of the Final Examination:—

I.	Design	22
II.	Mouldings and Ornament	25
III.	Building Materials	13
IV.	Principles of Hygiene	14
V.	Specifications	11
VI.	Construction, *Foundations, &c.*	12
VII.	Construction, *Iron and Steel, &c.*	13

Council Appointments to Standing Committees.

The following appointments to the Standing Committees of the Institute have been made by the Council under By-law 46:—

Art Committee.—Sir L. Alma-Tadema, R.A., *Hon. Fellow*; Messrs. George Frampton, R.A., and T. Raffles Davison, *Hon. Associates*; Messrs. George Sherrin and Wm. Flockhart, *Fellows*.

Literature Committee.—Messrs. Francis Bond, J. D. Crace, Dr. Murray, and Colonel Prendergast, *Hon. Associates*; B. Ingelow, *Fellow*.

Practice Committee.—Messrs. C. Fitzroy Doll, F. E. Eales, and Arthur Harrison, *Fellows*; Edward Greenop and Sydney Perks, *Associates*.

Science Committee.—Messrs. F. N. Jackson, A. T. Walmisley, and F. T. Reade, *Hon. Associates*; Lewis Solomon and F. Hammond, *Fellows*.

Memorial to the late Mr. Penrose.

The Council having had under consideration the erection of a memorial in St. Paul's Cathedral to the late Francis Cranmer Penrose, Past President of the Institute, have obtained from the Dean and Chapter permission to place a mural tablet in the crypt. The tablet, which will be of Istrian stone, will bear the following inscription:—

"To the Memory of Francis Cranmer Penrose, D.C.L., LL.D., F.R.S., F.S.A., Knight of the Order of the Saviour in Greece; for 45 years Surveyor to this Fabric; President of the Royal Institute of British Architects from 1894 to 1896; Antiquary to the Royal Academy; Architect, Antiquary, and Astronomer; a profound Scholar; Author of the *Principles of Athenian Architecture*, whose distinguished services in revealing the refinements of Greek Architecture are here commemorated by his professional friends and admirers. Born 29th October 1817. Died 15th January 1903."

The Council feel that many members would be glad to join in a movement to honour the memory of Mr. Penrose, and have therefore decided to invite members generally to co-operate in defraying the expenses connected with the erection of the tablet.

Subscriptions should be addressed to the Secretary of the Institute, and cheques should be marked "Penrose Memorial Fund."

The International Congress of Architects, 1904.

The following letter has been received from Madrid, addressed to the President and Members of the Institute:—

Monsieur et cher Collègue,—Nous avons l'honneur de vous faire savoir que la date du 30 Septembre, désignée par le règlement article 9, se réfère seulement aux travaux, communications et rapports à discuter au VI^{e} Congrès International des Architectes.

Pour ce qui est des adhésions, la Commission Exécutive, au cours de sa dernière réunion, a décidé que les adhésions et cotes-parts devront être envoyées avant le commencement d'août, afin de permettre à la dite Commission de savoir quel sera, d'une façon exacte, le nombre des Congressistes et de faire procéder au tirage des cartes d'identité et à la commande des documents et insignes du VI^{e} Congrès International des Architectes.

Veuillez agréer, Monsieur et cher Collègue, l'assurance de mes sentiments distingués.

Le Secrétaire du Congrès,
Luis M^{a} Cabello y Lapiedra.

World's Fair, St. Louis, 1904.

Liberal Arts, Department C—Group 27,
Architectural Engineering.

Class 158: Models and plans of public and commercial buildings; large and small dwelling houses, flats, apartment houses, &c.

Class 159: Models, drawings and specifications for foundations, walls, partitions, floors, roofs and stairways, wood and metal framings, &c.

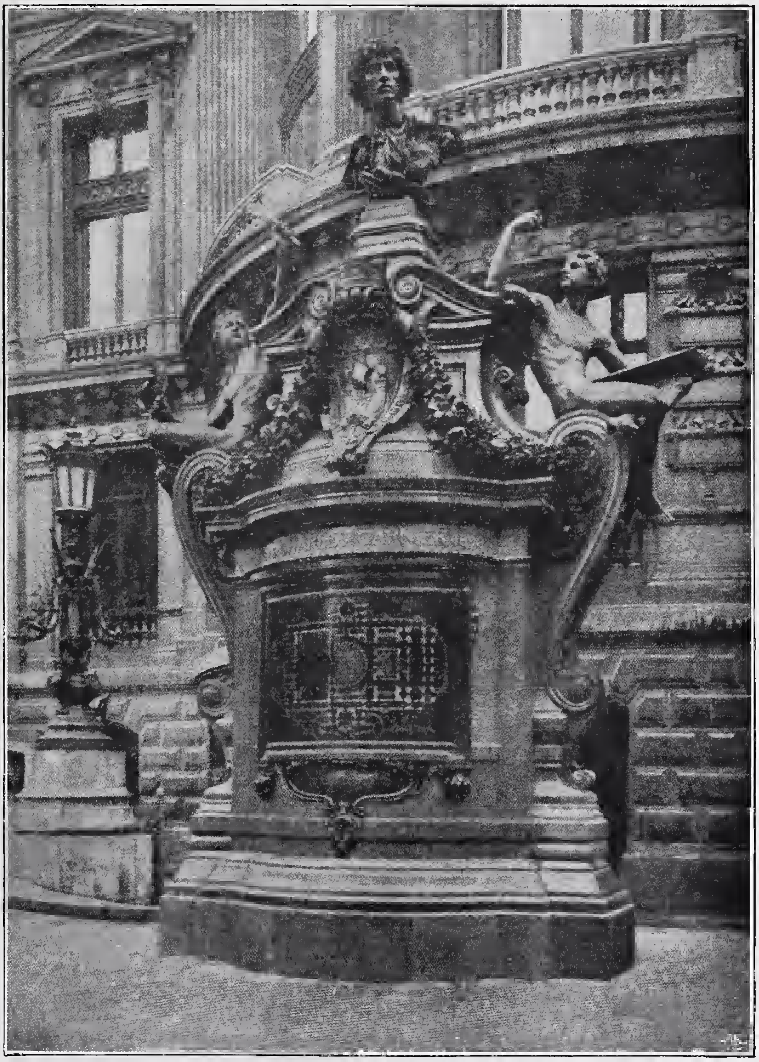
Class 160: Designs and models of special contrivances for safety, comfort, and convenience in the manipulation of elevators, moving stairways, doors, windows, house signals, fire escapes, ventilators, &c.

Class 161: Working plans for the trades; mason, carpenter, painter, &c., connected with building construction; designs and models of bonds, arches, coping, vaulting, &c.; plastering and construction of partitions; painting and glazing.

Members who may contemplate sending exhibits under the above department are requested to communicate with Mr. L. F. Vernon Harcourt, 6, Queen Anne's Gate, Westminster, S.W.

The Charles Garnier Monument in Paris.

By the courtesy of the editor of *L'Illustration* we are enabled to give a photograph of the monument erected by subscription in Paris to the memory of Charles Garnier, the architect of the Opera House, late Hon. Corr. Member and Royal Gold Medallist, who died in 1898. The monument is the design of M. J. L. Pascal (*Hon. Corr. Member*), who, in a letter to the Secretary of the Institute, alludes to it as his latest work. The bust of Garnier which surmounts it is the bronze executed in 1869 by Carpeaux, and represents the subject at the age of forty-four. The plaque upon which the plan of the Opera House is engraved is in bronze. The monument stands at the foot of the Library of the Opera House in the Rue Auber. At its inauguration on the 21st June speeches were made by three architects, Messrs. Charles Normand, Moyaux, and Pascal, and by M. Larroumet on behalf of the Académie des Beaux-Arts.



MONUMENT TO CHARLES GARNIER, ARCHITECT OF THE OPERA HOUSE, PARIS.

(From *L'Illustration*, 20th June.)

REVIEWS.

"PARENTALIA" PARED.

Wren's Parentalia. Essex House Press Edition. Fo. Lond. 1903. *Price* £3. 13*s*. 6*d*. [*Edward Arnold*, 37, *Bedford Street, Strand*.]

This book, word for word though it professedly is of that latter and chief portion of "Parentalia" which relates to the master of many sciences and great architect, is by no means a mere reprint. To prepare a reprint might seem an easy task enough. The task before us bears evidence of having been an arduous one, performed with care, skill, and labour.

Take, for single instance, the use or misuse of italics in the original. An analysis of the old system, often illogical as it is, and a logical translation of it into modern methods, must have involved an amount of constant attention to detail and a balanced judgment which deserve recognition. Stephen Wren's system was no whit so logical as his grandfather's architecture, nor can it be said that the judgment of the present editor, Mr. Enthoven, is by any means faultless.

We are disposed to wonder why the italics were retained at all, or, if retained, why not in their entirety. Their very profusion adds liveliness and colour, even if it be somewhat restless, to the original pages. The 1750 italic type was excellent, and suited to the printing press of the period. We are familiar with the heavy, rather dazzling, but singularly well contrived fount adopted in ordinary by the Essex House Press. It needs no comment in this case, save that it is too heavy for the paper. The italic fount, where now sparsely used, has been copied from that of 1750, but by reason of the fat printing and rough paper surface, will not, even apart from some actual faults of design, carry comparison with its prototype. In both founts we miss the pretty *ct* treated as a single letter, which deserves revival.

The hall-mark of the Essex House products lies in the head-letters scattered profusely over the pages. In the "Parentalia" before us these are in striking contrast to the less numerous, delicate, and somewhat feebly produced Italian initials of 1750. Finely printed—we had almost said perfectly—the modern designs are. But this luxurious book is, we take it, for two hundred and fifty luxurious architects and lovers of architecture, and it is hard for the architectural mind to associate Wren with the influence of the Morris paper or of "L'Art Nouveau." We could wish that Wren's chaste spirit had more thoroughly pervaded the designer, and, in the somewhat frigid atmosphere of Wren's architecture and mathematics, are unable to regard these sensuous head-letters as other than a blot upon the production, even although we should refrain from criticism of their author on learning that he, likely enough, is proud of them for their own sake. They have a merit, and mark a period.

But the architect whose "Parentalia" is a precious familiar cannot but be conscious that, with all the merits of the new volume, something of the old crusted flavour is absent. The old wine truly is in a new bottle. It is intended to be, clearly enough. We are instinctively reminded of the "Preservation" theory which now holds in regard to our ancient monuments. Restoration must not be. Yet, however fervently we subscribe to it in archæology, does it hold good in regard to books?

We thus miss the pungent portrait of the President of the Royal Society, the Professor of Anatomy, Astronomy, and Mathematics, the Master of Architecture. We feel disposed to give way to frank, if unparliamentary, language when we are told of the illustrations that the "designs are reproduced from the 1750 edition."

The west elevation of St. Paul's is redrawn a little more than one-fourth larger, and the building is shown about five feet too low for its width. There was not much to say for the original. The redraft is vastly inferior. The faults are emphasised by the increased scale and the heavy printing. Small as the original is, human figures are accurately represented as ornaments of the architecture. In the larger redraft they are mere scrapes of the pen. But one hardly dare think what draughtsmen like Masters H. Flitcroft and G. Vander Gucht would think of the so-called reproductions of their accurate and refined work, specially of the plates of the Temple of Diana at Ephesus. These drawings are now set before us to two-thirds the original scale. Yet on the pedimental elevation we find the steps drawn to the same scale as the original! The proportions are ruined. In the redraft of the Shrine we can count eight steps on plan and seven on elevation. Not so Vander Gucht. But we are amazed that any editor or supervisor could have allowed these travesties of Vander Gucht's deftly executed Ionic capitals to appear.

On the other hand, we shall be told that the style of the new drawings marries well with the type. Freely admitted; and although we prefer the original we have not much to urge against the redrawing of the Sheldonian roof, after all but a mere diagram. No typical demands can justify those five feet or those steps or those caps. It was not necessary in this case to put something "frankly modern" in the place of the old.

We miss again, from the new volume, Stephen Wren's florid but delicious editorial Preface, so redolent of Bath and The Wells and of so much, alas! which has gone from the comedy of life.

This is an unpardonable omission, and Essex House failing us, we cannot resist a quotation :

> Yet surely I can incur no Censure in affirming that I have spared no proper Expence, not only in Copper-plates, for Use and Illustration of the mathematical and architectonical Parts, but also in the Beauty and Elegance of the Book in general, out of Gratitude to the generous Subscribers (though few) and that Virtue and Science might make their publick Appearance in a decent Habit.

Was Essex House fearful of this paragraph in the light of the "reproduced" drawings and the binding? Be this as it may, the 1750 edition comes before us with a flourish of pipes and a pointing of toes—with an odour of Roses and Poppies "and such Vegetables," and for this inimitable preface we have to accept in 1903 as a postscript, a surely blatant and irrelevant cut of —*mirabile dictu*—Essex House, Chipping Camden, Glos., with the names of editor and supervisor superimposed.

We miss, too, the "Introduction," with the surely somewhat apocryphal family history which tells us (a special interest) that the Wrens "came originally from Denmark." No "Parentalia" can be complete which does not quote the filial title designed for the book—too long to give here—or the parental motto, "(and a very excellent one)" : *Si recte intus, ne labora.*

It was a happy thought to illustrate the concise descriptions of Wren's City churches by Mr. New's drawings. Of these, let it be said that they combine as happily as could be wished with the text, and make very pretty pages. For special praise the reproduction of Mr. Niven's plate of All Hallows, Bread Street (destroyed), may be singled out, and of Mr. New's original work, the plate of St. Bennet's is quite first rate. But some of the drawings are not by any means worthy of these two. St. Bride's steeple is a travesty of that remarkable and original work. Christ Church steeple is badly out of drawing, and specially inexcusable because it is set up from the true angle, with equally vanishing perspective. In St. Martin's and St. Paul's the very awkward introduction of a piece of the south-west tower of the Cathedral shows lack of eye, while Wren would have shuddered at the termination given to his great cupola. St. Peter's is really bad, and the interior of St. Stephen's, Walbrook, suggests no idea of the remarkable beauty and grace of that master's masterpiece, in regard to which "Foreigners very justly call our Judgement in question for understanding its Graces no better."

It is difficult to resist enlarging upon the matter as well as the manner of "Parentalia." It must be enough to say that it is a work which should be on (and frequently off) every architect's bookshelf. Most grateful shall we be to that publisher who brings such a goal into sight by setting before us an edition within the reach of the poor. We need not on that account be less grateful for the issue of an *édition de luxe*, as the present one. Allowing even for its failings and disappointments, be it said ungrudgingly that this is a very carefully prepared volume, which does credit to, as well as reflects, Essex House methods. Nor should Mr. Selwyn Image's Greek type fail to have its full and deserved measure of praise meted out.

On retiring from the pleasant task of a careful perusal of an old friend in a new dress, we are left wondering why, instead of Wren's consolatory and stoical reflection :

> Nunc me jubet fortuna expeditiùs philosophari

we are bidden to stumble over

> Nunc me jubet fortune expeditùs philosophari,

and we are sadly reminded that in Sir Christopher's age the Latinity of an English gentleman was as ready and precise as his own tongue.

Is it not also fitting to remind ourselves that Wren was a signal proof of the forgotten axiom that no man can be a master of one trade only?

Wren stands ever before us, as we peruse these delightful memoirs, pointing the finger away from Specialisation.

W. D. Caröe.

PHILADELPHIA IMPROVEMENTS.

The Philadelphia Parkway Project, 1902. *Issued by the Philadelphia Parkway Association.*

This sumptuous volume forms an excellent example of the strenuous character of American methods. It is the plea of the Philadelphia Parkway Association to convince their fellow citizens that it is eminently desirable that a new boulevard should be cut diagonally across the city from the City Hall to the entrance to Fairmount Park, one of the principal parks of Philadelphia. The camera is pressed freely into the service, and excellent photographs of the Champs Elysées and the chief European Boulevards are published in order to enkindle the imagination of the Philadelphians.

It is at first sight not quite easy to understand why our American cousins have with such apparent persistence refused to recognise Euclid's contention that two sides of a triangle are, taken together, longer than the third side. The real reason, however, has clearly been the absence of strong civic control safeguarding the corporate interests of the inhabitants. The planning of the modern American city generally falls to the lot of the real-estate man. He wants square lots of a convenient shape for building. The convenience of the wayfarer is not a question that excites his interest. So it has come about that the patient American people in their daily rounds are doomed to pass from point to point by a series of right-angled moves, for all the world like rooks on a chess-board.

There are many signs that the renaissance of civic feeling in the States is directing public attention to the need for more diagonal thoroughfares. Washington City is being increasingly studied as an example of how to do things, as certainly there is no city where it is easier to get about. The constant congestion in Broadway, New York City, forms another excellent example of the need for the diagonal thoroughfare.

The difficulty that will probably confront the Philadelphian reformers is one of cost. We in London are perhaps case-hardened in this matter, and know from experience what a long fight "improvements" often involve. But if they are well thought out in the first instance, and are, in fact, improvements in deed as well as in name, the ratepayer does not finally resist the financial call. So it probably will be in Philadelphia. They were public-spirited enough there to spend over £1,000,000 on their City Hall, which has been, perhaps not very wisely, placed right in the Centre Square of the city. Fairmount Park, to which it is proposed the new boulevard should run, is a delightful place, full of natural beauties. It extends along both banks of rather a wide river for about four miles, and is considerably larger than Richmond Park in area.

The main axial line of the proposed new avenue runs from the tower of the City Hall (which has the merit of height if not of beauty) to Siemering's fine Washington Memorial at the entrance to the park. The avenue, however, would intersect on its way a square called Logan Square, and this has played an important part in the form of the new road. From the park to Logan Square the proposed width is 300 feet, while in the latter half the width is diminished to the more modest dimensions of 113 feet, or 13 feet wider than Kingsway.

Whether a scheme on so magnificent a scale can be considered as within the range of practical politics is a question difficult to say. Still, it is certainly right to prepare a comprehensive plan in the first instance. If the City Fathers subsequently compel some retreat, the result cannot easily be mean, and may still contain the possibility of a dignified treatment. But unless some effective control over the buildings on the frontages can be exercised it would be better to do nothing. When the present writer was in Philadelphia last September, and saw the effect of the "sky-scrapers" in Broad Street—the chief street of Philadelphia—he pondered deeply. If modern civilisation demands buildings of thirty storeys, let the fact be admitted and the streets designed accordingly. But nothing can more readily destroy the symmetry of a city than these gigantic buildings of irregular heights and occurring at irregular intervals along the chief streets. Some day it will be recognised in America that the doctrine of individual liberty does not permit of the construction of public eyesores.

The future of this proposal will be watched with considerable interest in England, and I am sure my professional colleagues of the Royal Institute of British Architects will permit me to express our hearty sympathy with Mr. Albert Kelsey and the Executive Board of the Philadelphia Parkway Association in the enterprise that has been so courageously set on foot.

Owen Fleming.

OLD ENGLISH DOORWAYS.

Old English Doorways. A Series of Historical Examples from Tudor Times to the End of the XVIII. Century. Illustrated on 70 *Plates reproduced in Collotype from photographs specially taken by W. Galsworthy Davie; with Historical and Descriptive Notes on the subjects, including* 34 *Drawings and Sketches, by H. Tanner, Jun., A.R.I.B.A. La.* 8o. *Lond.* 1903. [*B. T. Batsford,* 94, *High Holborn, W.C.*]

This book consists of seventy collotype plates of representative English doorways, dating from the middle of the sixteenth century to the time of the brothers Adam; and a short introductory essay on the subject of doorways in general, with detailed notes on the various examples illustrated. Mr. W. Galsworthy Davie is responsible for the choice of the examples, and also for the photographs from which the plates have been prepared; Mr. H. Tanner for the introductory essay; and both may be heartily congratulated upon the charming result of their joint labours.

No apology is needed, as Mr. Tanner remarks in his preface, for a history of English doorways of the period chosen. The subject possesses many features of interest, not the least being the susceptibility of the doorway to Renaissance influence. Here the new principles of design are to be met with as soon as anywhere, and numerous examples are given by Mr. Davie in which the native style has been more or less conquered by its foreign rival. These are, for the most part, taken from well-known buildings such as Hatfield House, Cobham Hall, Castle Ashby, Kenilworth, &c.; but one, a doorway from Painswick, Gloucestershire, is probably not so well known. This, which is dated 1678, shows to what a late date the Gothic tradition survived in small and out-of-the-way places.

But it is rather in the numerous illustrations of later doorways that the main interest of the book lies. The great houses erected during the second half of the sixteenth century and the first half of the seventeenth are so well known, and have been so fully described already in such works as Mr. J. Alfred Gotch's *Architecture of the Renaissance* *in England*, and Mr. Reginald Blomfield's *History of Renaissance Architecture in England*, that little now remains to be said about them; but the smaller houses, especially the town houses, built during the eighteenth century, often possess features of interest which, so far, seem to have received little attention. It is principally the doorways of such houses as these which Mr. Davie has chosen for representation. His examples are drawn from all parts of the country, and each one has been carefully chosen to illustrate some particular feature. Thus we have a group of doorways with straight or curved pediments, another group in which the sidelights enter intimately into the composition, another showing different varieties of flat and shell-shaped hoods, and so on; and to each plate Mr. Tanner adds a short descriptive note, often further illustrated by detail sketches made by himself.

In these notes a few errors may be found which have escaped the vigilance of the proof-reader. For the most part these are quite unimportant; on page 41, for instance, figure 23 is wrongly referred to as figure 24; but a more serious one occurs on page 40. Here we read: "The porch from Winchester, illustrated on Plate lxv.,* shows evidence of the lateness of its date in the elongated Doric columns and the varying triglyphs." On turning to Plate lxv., however, one finds a doorway possessing neither Doric columns nor triglyphs, the order employed being distinctly Composite. It is not until one has expended some little time over the matter that one discovers that the description really refers to Plate xxxiii. One also wonders whether the author wrote "carved beads," on page 28, in his description of the doorways from Aston Hall, figured on Plates xvi. and xvii. We are told: "Although a fine house, the details and ornament cannot compare with that of many an earlier building, and the carved beads on both doors are feeble in the extreme." The writer of this review is fairly familiar with Aston Hall, but he has to admit himself unable to understand the meaning of the last clause of this sentence.

These, however, are at most trivial blemishes, in no way detracting from the value of the book as an interesting contribution to the history of our native architecture, and one may conclude, as one began, by complimenting all concerned upon the production of a very charming book.

Erdington. BENJAMIN WALKER.

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* This number is given in the text as lv., an evident misprint for lxv. In the following paragraph lvi. appears for lxvi.

LEGAL REGISTRATION OF ARCHITECTS.

19 *Craven Street, W.C., 2nd July* 1903.

To the Editor of the JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

DEAR SIR,—Professor Beresford Pite's attack upon the Registration movement in the last issue of the JOURNAL is in a vigorous and healthy spirit, with which I, for one, can entirely sympathise, though holding views very different from those which he expresses; and, with him, I trust that its publication, following that of Mr. Seth-Smith's able letter, will lead to a candid expression by many provincial members of their views upon this important question—more vitally important, probably, to them than to us who practise in London.

Professor Pite, however, in his eagerness, has ascribed motives to the promoters of the movement which are non-existent. Of all those who have taken, or are taking, a prominent part in it, I alone stand to benefit by the passing of the measure, and that only in my capacity as an architectural tutor, and not in that of a practising architect. My colleagues of the Registration Bill Committee all recognise that the result might be to their personal disadvantage—temporarily, at any rate—rather than otherwise, and they are willing to face this in order to secure to a future generation the great benefits which must ultimately accrue. They admit that the immediate result of the Registration Bill becoming law would be, as Professor Pite says, to give legal recognition (whatever that may be worth) to many undesirables; but they see, as apparently he does not, that these undesirables now practise and do as much harm as they would do under the Act—and probably more, having in view the punishment of "Removal from the Rolls" which would overtake those who were guilty of dishonourable conduct. Moreover, they see that the ranks of these undesirables are being constantly recruited, and will continue to be recruited, until some such Bill as that now proposed is passed. It will then cease, and, though a generation must elapse before all are eliminated, the position of affairs would begin to improve at once.

That this constant recruiting of the ranks of the inefficient takes place, my experience as a tutor confirms, as do also the Institute records of the large number of gentlemen who pass the Preliminary, and some the Intermediate Examination, but who commence practice without presenting themselves for the final test. In the majority of these cases, if it were compulsory upon them to study in order to pass this test they could do so, to the great advantage of themselves and of architecture.

As to the even less desirable, our provincial members know how their ranks are recruited better than we, and as a rule welcome the possibility of preventing this constant influx of the mean and the dishonourable into the ranks of British architects—as only some such measure as the Registration Bill can prevent it.

It is Professor Pite's view which is the narrow one, not that of the Registrationists. He would depend upon the Institute alone and work for the benefit of its members alone. We would compel the recognition of a high code of professional morality upon *all* practitioners. We would insist that all students, previous to practice, undergo the thorough training which an obligatory test examination as to qualification demands.

This examination need not be that of the Institute, for though the Institute is rightly given the refusal of the privilege of holding the examination under the Bill as now drafted, other means of examining are provided in case this privilege is refused.

Moreover, registration under the Bill would not in any sense involve membership of the Institute, which would remain a distinct body doing its own important work, and whose membership could be safeguarded in any way thought fit.

Yours faithfully,
G. A. T. Middleton.

Sheffield, 4th July 1903.

To the Editor of the Journal of the Royal Institute of British Architects.

Sir,—Professor Beresford Pite's letter [*ante*, p. 455] recalls the fact that, for some unexplained reason, provincial members have largely refrained from publicly stating their views on this question, and have—perhaps with some reason—obtained the credit as a body for supplying much of the motive power behind its long-drawn-out agitation. As this seems just now to be passing through one of its recurring acute stages, I may perhaps be pardoned if—failing anyone better qualified—I venture to say a word on behalf of those provincial architects who form no inconsiderable number, and who strongly object to the assumption that they, as a body, favour proposals of so short-sighted a nature.

Everyone who approaches the subject in a sincere spirit will consider first, and beyond all else in importance, the advancement of architecture itself, and not the professional interests of those who follow it; and how any man can seriously suggest that the level of English architecture is going to be raised by legally conferring the title of architect (for to this plain issue it comes) upon all those who can establish their ability to devise and construct buildings, is beyond my comprehension. People whose ideas as to what architecture is and what it is not are of so elementary a description, would, I have no doubt, find plenty of men outside our own ranks sufficiently well-informed to enlighten them, if this question of Registration ever became one of burning public interest.

The principles which ought to guide us in forming a sound judgment are well indicated in the masterly analysis of the late Professor Freeman, in the Introduction to his *History of Architecture*; and as one does not wish to burden a letter like this with quotations, one may commend its careful perusal to the Registrationists. To contend that the present state of affairs would be improved, even in the course of generations, by the compulsory registration of *architects* is to make an abnormal demand on one's credulity: the direct contrary would be the result, causing numbers of men, who, under the impulse of a properly directed enthusiasm, might have cultivated their natural powers of design to the utmost degree, to turn aside instead from the ways of ambition, and to devote their energies, as William Burges expresses it, "to hunt up work and do the same according to their lights, consoling themselves that many others would do it much worse." This spirit is sufficiently in evidence already, and probably those are not far wrong who attribute to it that indifference of the public towards modern architecture and its exponents which is so constantly being lamented.

Professor Pite has done well to note and dispose of the attempt to smuggle in this question under cover of the urgent and all-important one of architectural education, and I am sure that the Institute will have the support of all the best, if not the most demonstrative, of its members, in refusing to be led astray from sound policy in order to aid in setting up a system under which architecture would be delivered over, bound hand and foot, to the commercial Philistines of the period.

Yours obediently,
Charles M. Hadfield [*A.*].

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46 *Lincoln's Inn Fields: 22nd July* 1903.

To the Editor of the Journal of the Royal Institute of British Architects.

Sir,—With reference to the letter on this subject appearing in the last issue of the Journal, and with all respect to my valued friend Professor Beresford Pite, I deplore his method of controversy.

If we are to judge the opponents of the proposed statutory education movement by their principal spokesmen Messrs. Jackson and Pite, we must conclude that, having no sufficient reasons to urge in support of their position, they are compelled to fall back on the only remaining weapon, namely, that of attributing unworthy motives to those who differ from them! We are charged with self-seeking and hypocrisy! This surely is not the most impregnable form of defence? We shall be glad to know wherein the living individual architect will be a gainer by registration.

From this, Mr. Pite proceeds to assertions and assumptions for which, I venture to say, he can give no proof.

This subject, vital one way or other to the profession, having been opened, must not be allowed to be dropped until every member of the Royal Institute of British Architects has looked into it thoughtfully, and until the Council in particular have given a most careful and open-minded consideration to all its aspects before pronouncing for or against it. Had Mr. Pite given it the reflection some of us have devoted to it he could not have described it as being *a narrow policy*. It is obviously the opposite, being a proposed reform of the boldest and broadest character. The ostrich policy can scarcely be called a broad and bold one; but it is clearly the policy advocated by the Professor. He would have us bury our vision of a disorganised and untrained profession and esteem ourselves wise in doing so!

The distant stars upon which he calls us to gaze withdrew from the Institute when the principle of a more thorough and systematic training and testing for architects was initiated; but I notice that the dust-cloud of Mr. Pite's rhetoric skilfully obscures this fact. A wider application of this principle is the essence of registration. What we would like to know is, whether Mr. Beresford Pite, and those on whose behalf he speaks, agrees with the views of the secessionists, namely, that the Royal Institute of British Architects' examinations are delusive, and prejudicial to the art of architecture. If this be so, then we can understand them; and if they can prove their contention, I for one will join them in endeavouring to abolish the examinations.

We are thankful for Mr. Pite's admission that the profession has reason to be ashamed of things as they are, and only regret that so able an advocate is not in agreement with us as to how best to remedy them, and that he has absolutely no alternative policy to lay before us!

That registration would achieve this great end, and, in fact, is the only practicable method of achieving it, is just one thing about which no doubt need arise. Those great professions which are already registered prove it. The daily papers daily testify that these bodies are able to remove unworthy practitioners from their rolls; yet Mr. Pite asserts that registrationists ignore this vastly important point! Is it quite so clear that the Royal Institute of British Architects is as immaculate as Mr. Pite paints it, or that it has always been able to eject its erring members?

He also assumes that the vast bulk of the advocates of registration are outside the Institute, and that these pseudo-architects are clamouring for a cheaply earned status equal to that enjoyed by a member of the Institute, and one which would be attained by entering the names of all established architects in one statutory register instead of, as at present, in a number of directories. This very simple process would leave things exactly where they are at present. A higher standard of culture alone can confer *status*, and this standard would be applied generally as from the coming into force of such an Act, and would be immensely powerful in raising the general character and tone of the profession. This assumption of his is peculiarly unfortunate in the light of the fact that more than half the members of the Institute (already registered as trained men) desire their Council to initiate this pressing reform!

So much in direct reply to Mr. Pite's letter to you, Sir; but as he is one of those who oppose registration on the ground that its effects would be inimical to art, may I be excused for briefly reciting our reasons for holding the opposite view?

It is asserted that an artist's professional standing can be justly judged only by his executed works, whether they be pictorial, plastic, or architectural.

This is heartily conceded by registrationists, and hence the need of jealously guarding the portals of the Royal Institute of British Architects' Fellowship, or of creating an Honours Fellowship and reserving it as a distinction given only to men whose executed works show a high order of merit in design. This is the principle of election to the privileges of all Art Societies of high standing.

We registrationists claim that the title of "Architect" should not be borne except by those who have had a professional *training* as ascertained by examination. This principle is recognised by our opponents, so far as the compulsory training in construction and sanitary science is concerned; but they assert that any examination in artistic design (which, of course, differentiates an architect from an engineer or builder) would be delusive.

To this argument we reply that it is impracticable to divorce the science and the art of an architect's training, and that the Royal College of Art excludes from its training schools persons who obviously have no aptitude for art.

It is such persons we desire to exclude from our ranks, and by a similar sifting process, and we claim that *such a system of exclusion must work a vast reform in raising the art standard of* the architectural profession.

It is essential that a body of experts such as the Institute should in the main organise and control the examinations qualifying for the right to use the title, but this qualification should be quite distinct from election to any class of membership of the Institute, although entitling to Associateship, as now.

The force of the international expert opinion which I have quoted in favour of the protection of the title of "Architect" cannot be gainsaid; and in answer to Mr. Pite's criticism thereon in *The Times*, I would say that the whole educational history of England proves us capable, as a people, of avoiding Continental extremes, and of devising such schemes of instruction as secure at once something of the thoroughness of Continental and American methods, and the variety and flexibility necessary to safeguard our English love of individuality and freedom.

I cannot conclude this letter without mentioning one very important aspect of this subject—namely, that while we postpone, year after year, the creation of any standard of training, we are, as a profession, rapidly gaining impetus in the downward direction. Every year sees a higher standard imposed in all the other great professions, with the result that those youths who are too indolent or too stupid to qualify are induced to follow the line of least resistance and crowd into architecture! Moreover, since our only examinations are voluntary, a large proportion of those who do enter as students of the Royal Institute of British Architects drop their efforts midway, knowing that their chances of successful practice, and even their membership of the Institute, are in no way dependent on qualifying!

For the above reasons, and for many others, I cannot accept Mr. Pite's invitation to dissociate myself from this movement.

I am, Sir,
Yours faithfully,
W. HOWARD SETH-SMITH.

ST. MARY MAGDALENE, BATTLEFIELD.

The quincentenary of the battle of Shrewsbury was celebrated last week at the county town, and a very interesting programme was carried through, including special services at the Abbey church and Battlefield Church, with sermon by the Bishop of Lichfield; lecture on the battle by Dr. J. H. Wylie; lectures on the church and college by the Rev. D. H. S. Cranage and Mr. W. H. St. John Hope; reception by the Mayor and Mayoress; a public luncheon; performances of various plays of Shakespeare; old English sports; and excursions to places of interest in the neighbourhood.

The church of St. Mary Magdalene, about three miles north of Shrewsbury, is said to have been built on the site of the famous battle, usually called the battle of Shrewsbury, fought on the 21st July 1403, in which the insurgent forces under Percy, Earl of Northumberland, were defeated by Henry IV., and Hotspur with a large number of nobles slain. The ground in the vicinity at the present time presents the appearance of earthworks. These mounds are probably the foundations of the College buildings. The building was erected by one Roger Ive, Rector of Albright Hussey, 1398–1447.

On 28th October 1406, Richard Hussey obtained licence from the King to grant two acres of land on the site of the battle to celebrate divine service daily in a certain chapel to be built there, and where mass might be said for the souls of the king and of the slain. The church dates from 1406–9; the tower is of later date, and was completed by Adam Grafton, Master of the College, late in the fifteenth century, and is, curiously, not at right angles to the main building. In the band of panelling on the east side is a shield with the inscription

Maister Adam Grafton.

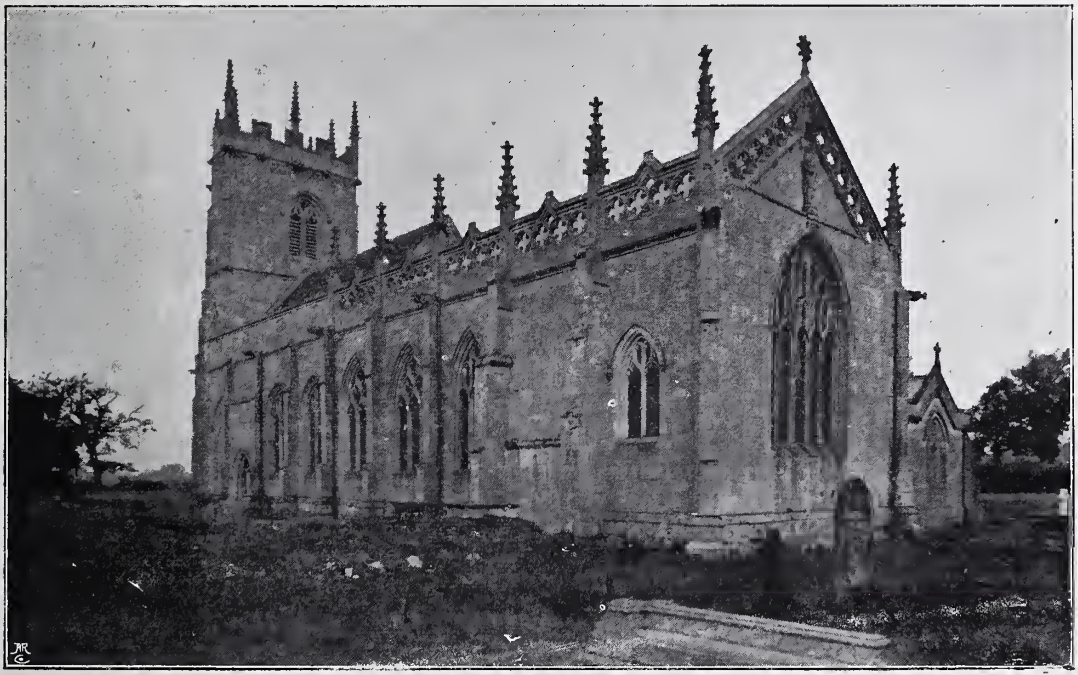
A service was held in March 1408–9, and then it was that Henry IV. founded the College. A charter of 1410 established the chapel of St. Mary Magdalene into a perpetual chantry of six chaplains, Roger Ive being appointed Master. The College came to an end on the accession of Edward VI. The foundations shown on the accompanying plan [p. 492] are above ground at the present time, and no doubt upon further excavation more remains would come to light. A doorway is now blocked up through which communication with the church was obtained. The church is built without any division between chancel and nave.

At the restoration in 1861 a modern screen marks this division. It is curious to note that three of the windows are an exception to the Perpendicular style, being Decorated in their tracery. The roof has been restored, although many parts of the original remain, surviving the first restoration in 1749, and the second in 1861. On the beams are painted shields, bearing arms of the knights who took part in the battle. Above the east window outside, in a carved canopy, is a statue of Henry IV. in armour.

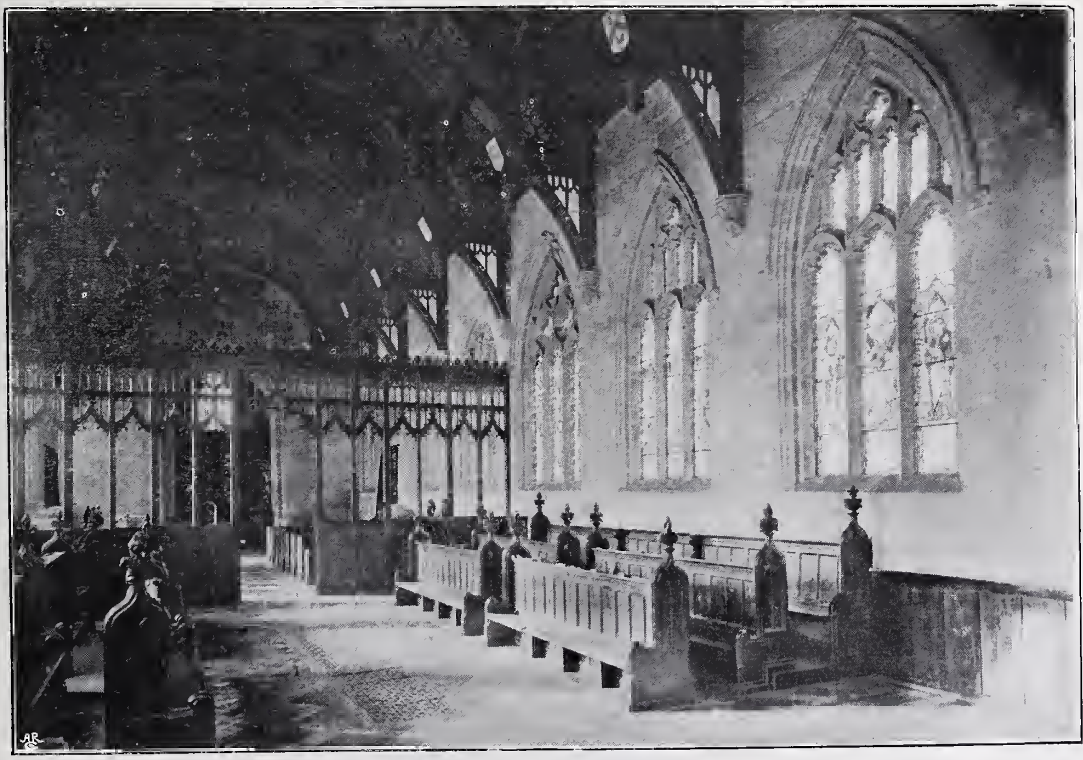
The Decorated parapet was added in 1861. Some of the gargoyles belong to the original building. The carving depicts cannon and men in armour. The church possesses a curious relic, now placed in the sedilia, in the shape of a carved wooden figure, "Our Lady of Pity," the Blessed Virgin with the dead Christ on her knees. On the north side is a modern addition—the Corbet chapel, used as a vestry.

The writer is indebted to Mr. Martin J. Harding, of Shrewsbury, for the photographs which accompany these notes.

W. ARTHUR WEBB [*A.*].



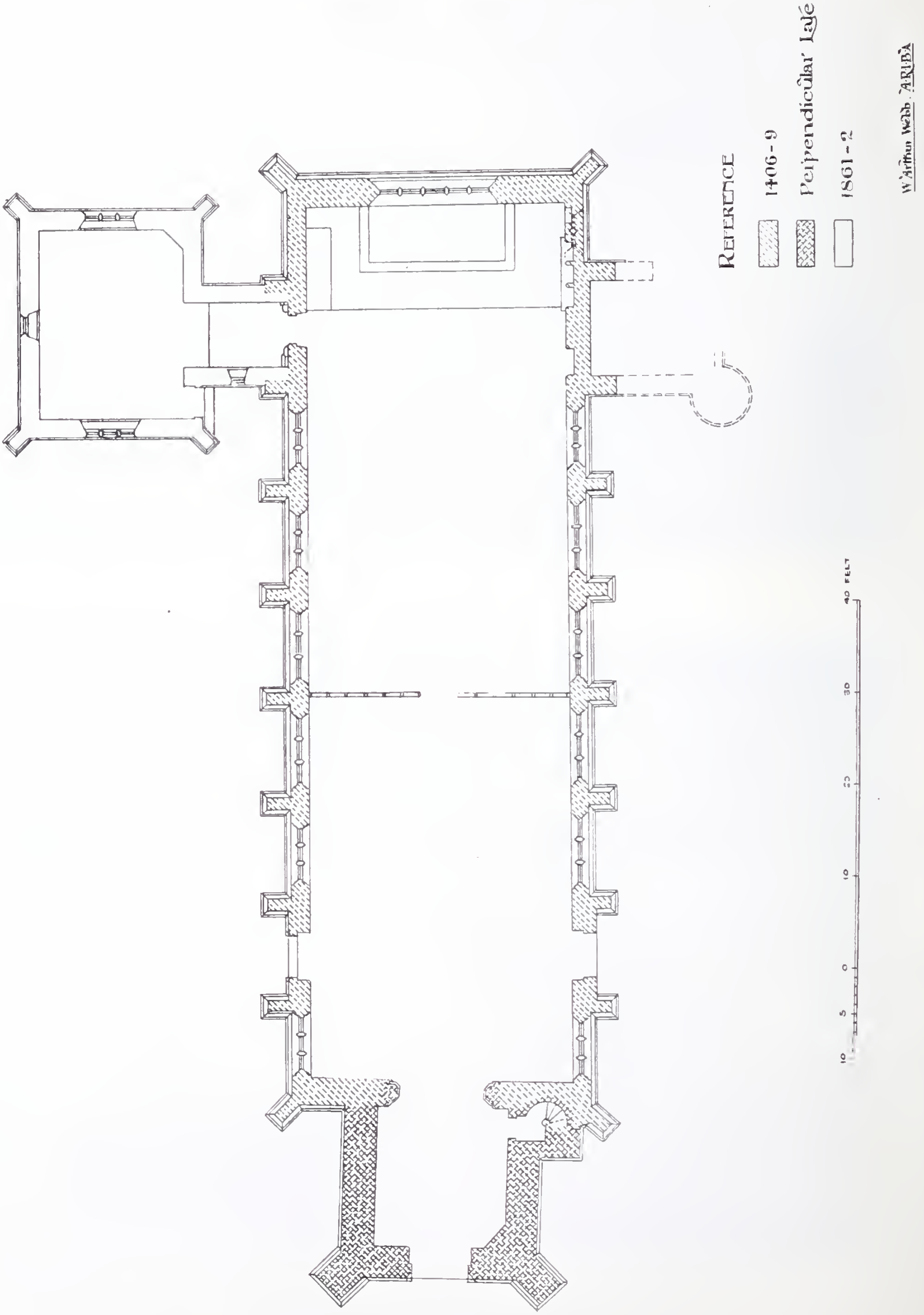
VIEW FROM THE SOUTH-EAST.

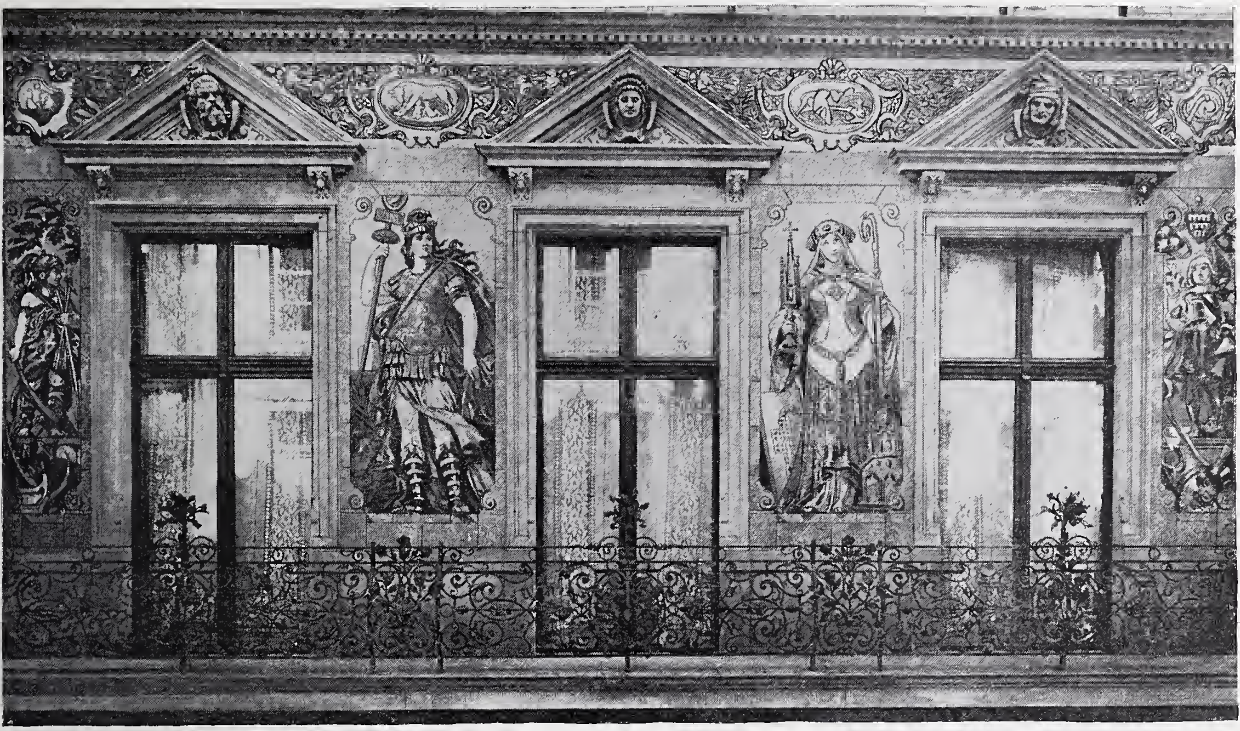


INTERIOR, LOOKING WEST.

ST. MARY MAGDALENE, BATTLEFIELD.

BATTLEFIELD





Mosaic of the Façade of the Palais de Justice, Cologne.

COLOURED BUILDINGS.

ROYAL ACADEMY LECTURES 1903.—III.

By Professor AITCHISON, R.A.

PAST PRESIDENT, ROYAL GOLD MEDALLIST.

IT is impossible to embrace so vast a subject as colour in one lecture, even when its application to architecture is alone to be considered, so I shall begin with colour applied to the outsides of buildings, and hope that I may be able to treat of inside colour hereafter.

In considering the subject of colour my intention is to show the position colour holds to man, the passionate love mankind have for it, whether it be exhibited in Nature's works or in works of art; to describe how mankind have directly employed beautiful works of nature to adorn their temples or their dwellings, to show that colour has almost always been used to enhance the beauty of buildings, and to give some of the most striking examples I know; then to mention the modern examples of coloured architecture in London and elsewhere, and to make a few remarks on permanent coloured materials that can be used externally in England, and particularly in London and the large manufacturing towns.

Colour, if we include white with its gradations to black, is the only visual means by which things can be known, for there are persons so unfortunate as to be colour-blind who still see the shades and shadows of things. John Dalton, the discoverer of atomic chemistry, was colour-blind, and its prevalence among engine-drivers and look-out men has been the cause of many accidents.

By the general consent of mankind the arrangement of certain colours in certain proportions causes delight; in fact, for the bulk of mankind Nature has made almost every visible phase of earth, air, fire, and water beautiful by colour. When we go into the country for delight, what is it we go for? I will not exclude the song of birds, the lowing of cattle, the murmur or roar of the sea, the babbling of brooks, the thunder of waterfalls, nor the sighing of trees; I will not omit the scent of the may-blossom, nor of the traveller's joy, nor the new-mown hay; but still it is mainly to feast our eyes on the beauty of colour. Every poet and every rhapsodist has sung or descanted on the beauties of trees, flowers, meadows and mountains, seas and rivers, lakes and waterfalls, of the moon, of the starlit sky, of the sunshine, and of the clouds, from Homer's "rosy-fingered Aurora" to "a looming bastion fringed with fire." Shelley says "men hardly know how beautiful fire is," and the story-teller of the *Arabian Nights* compares the violet to sulphur burnt in the fire. What is the exciting cause of "those gilt gauds men children run to see" but the hunger after colour?

Why are the painters courted and the sculptors neglected but because the former deal in colour that we all know and love, and the latter in a white abstraction of the human form which in this climate most of us have hardly seen? We love landscape-painting because it preserves for our admiration the colours as well as the forms of Nature, and such evanescent phases of colour that strike us as most lovely and most rare. In Turner's picture of "Ulysses deriding Polyphemus," though we have the golden galleys and the coloured dresses of the men, the main beauty is in the ocean, the mountains, and the sky ribbed with the flaming spokes of the setting sun. In one of almost the last landscapes that were painted by our lost brother Vicat Cole the opalescent mist rising from the river was most beautifully shown. We love figure-painting because it not only gives us the shapes of men and animals, and the incidents of life, but also the exquisite and subtle tones of flesh, which harmonise or contrast with the colours of the hair and eyes, with lovely or gorgeous robes, with armour, with the sky, water, trees, and buildings. Landscapes are always open-air effects, and in numberless instances figure-subjects are so too.

Titian was particularly fond of open-air effects, and most of his gorgeous colourings combine flesh and robes, trees and water, buildings and sky. To name no others we have his "Bacchus and Ariadne" in London and his "Virgin and Child" in the Louvre. If we can bring our minds to leave out of consideration his knowledge of form and composition, and his skill in portraying them, we have but a collocation of various colours and tones making a gorgeous and enchanting whole. This abstraction can perhaps be less made in the "Bacchus and Ariadne" than in the other pictures of Titian, as the discord in the red and blue of Ariadne's dress is put there to rivet our attention on her. But how gorgeous are the orange and blue of the Bacchante's dress, the red dappled robe of Bacchus, and the ring of pale stars in the blue heavens!

In the "Virgin and Child" at the Louvre a female saint presents a palm-branch to the Virgin, while in front is St. John with his lamb. The background to the Virgin is grey architecture deepening into brown, which contrasts with the Virgin's glowing flesh and dark hair; she wears a deep brownish crimson robe with a black cloak, and nurses the Infant Jesus, whose warm flesh and short white shirt stand out against the black. The saint has dark red hair and deeper coloured flesh than the Virgin, and her gown is of green velvet with a gold girdle, and a deep crimson cloak. The child John in the foreground mainly gives warm flesh tones set off by a dull-green garment and by a grey lamb. Immediately behind the saint is brown burnt-up herbage, with a forest of green trees on the ridge beyond, a deep blue sea against which some brownish foliage cuts, and a pale warm sky with white and grey clouds, the whole forming one of the most sumptuous pieces of colour imaginable. I may mention

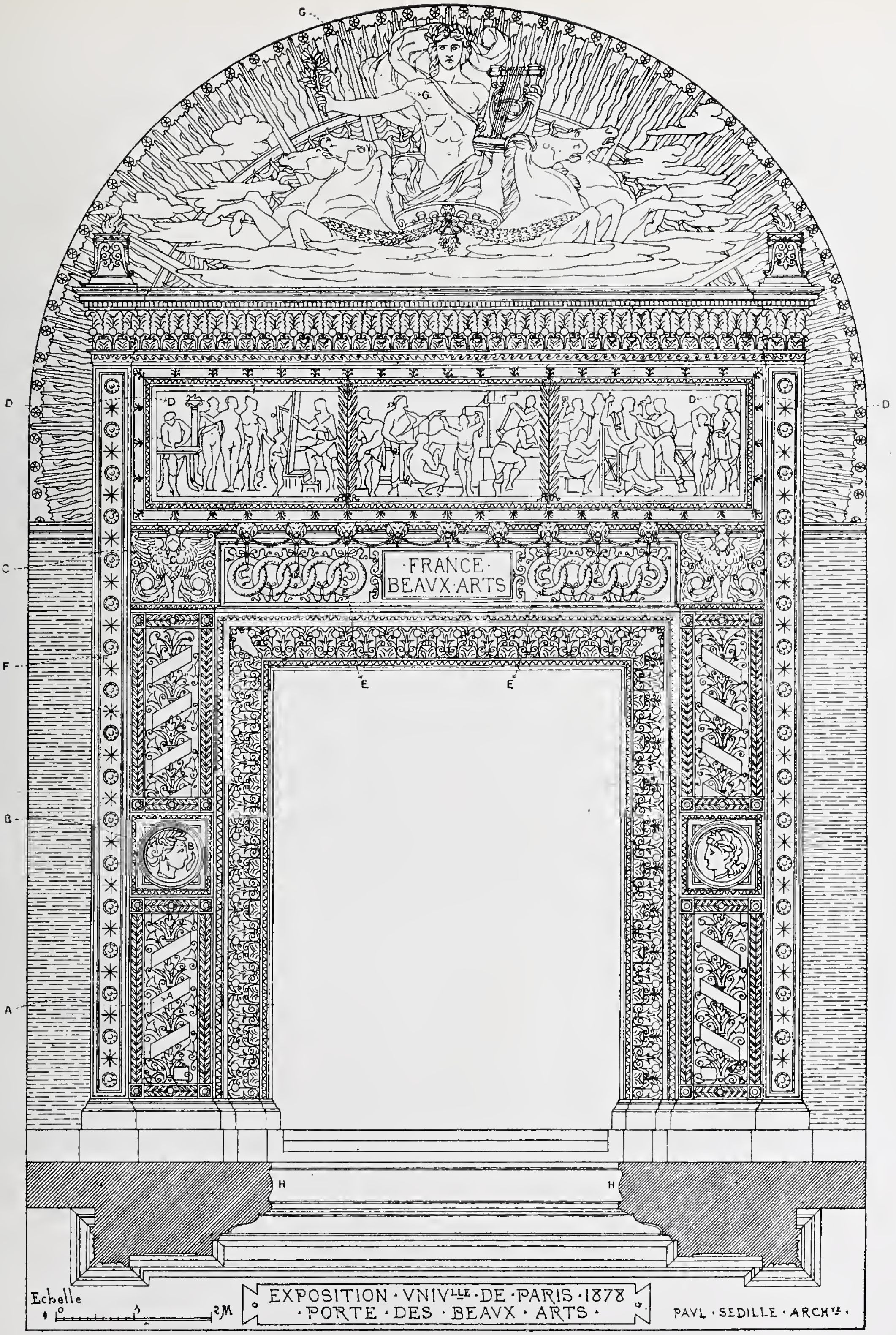


FIG. 1.—Doorway composed entirely of pieces of terra-cotta and enamel, with gold *rehauts.*—A, *Pilasters*: Green vegetation, white flowers, black palm-leaves, light ribbons with gold inscriptions; the whole upon a yellow ground. B, *Medallions*: Heads in terra-cotta wreathed with gold upon azure ground. C, *Capitals*: Sphinx, with wings enamelled white, body pale red. D, *Frieze*: Bas-relief in natural tones, upon azure ground; palms of gold. E, Wreaths of gold, &c., &c. F, *Side pilasters*: Gold stars, white flowers. G, Triumph of Apollo, rays of gold upon azure ground. H, Oak torus enamelled.

Titian's "Entombment," with a shepherd's plaid scarf against the dappled crimson robe, one of the most magnificent of Titian's pictures. Bonifazio's "Supper at Venice" or his "Finding of Moses," in the Brera; Tintoretto's "Miracle of St. Mark," some of Schiavone's, Paul Veronese's, and Pieter de Hooge's work have splendid harmonies of colour. I merely mention these to show that if superb pieces of colour can be culled from nature and put on canvas to enchant us, a building may be substituted for the canvas and be equally superb in colour.

In the bas-relief of the "Visit of Bacchus to Icarius" we see a servant fixing up garlands on the house. Here is a direct application of beautiful coloured leaves, fruit, and flowers to adorn a building, and to this day wreaths and garlands are so used in Italy. All of us have admired the labourer's white cottage latticed with rose-trees, with green or golden leaves, and pale yellow, pink, or blush roses; or a red-brick cottage trellised with white roses, the fire-thorn or a purple jasmine of Japan, with clematis, wistaria, the scarlet-runner, or the passion-flower; or the cottage is beautifully ornamented by being covered with a grape-vine full of bunches of green, purple, or black grapes, not to speak of those houses wholly green with ivy or glowing with the red autumnal leaves of the Virginia creeper. It is only for the last few centuries and at occasional epochs that buildings have been left to the monotone of one material, and we must not forget that the word "monotonous" expresses neither admiration nor delight.

The Egyptians, the Persians, the Assyrians, the Greeks, the Etruscans, the Chinese, the Japanese, the Mexicans, the Peruvians, the Arabs, Moors, and Turks, all enriched their buildings with colour; nay, I believe the Gauls, Germans, Scandinavians, the Goths, Huns, and Vandals did the same; and all that group of Western nations which we call Mediæval made their buildings striking at least by the aid of colour.

Why has colour disappeared from the outside of modern buildings? For till quite lately we only allowed ourselves pea-green outside shutters, a red chimney-pot, and a gilded weather-cock; and though in this country Puritanism may have had something to answer for, in Italy Palladio had more, who said "white was more acceptable to the gods." Beyond these two factors I believe the main reason to be that this adornment was mostly perishable, and in bad times was not renewed, so that many generations have grown up without ever seeing coloured buildings, and novelty shocks mankind's conservative instincts. I can remember the storm raised by Owen Jones's colouring of the Exhibition buildings of 1851: he had, I believe, been to Egypt and seen colour on a grand scale there, and had studied the colouring of the Arabs and Moors at Granada; his critics knew no colour but that detestable application of gold and white they had seen at Versailles, or perhaps some pale pea-green and gold in their own drawing-rooms.

Viollet-le-Duc says in his article on painting: "The Romans during the Empire seem to have been the first people who erected monuments of white marble or stone without colour; as to their stucco work this was always coloured, whether inside or out."

Decorative painting once played a most important part on the outside of buildings; the front of Notre-Dame at Paris shows many traces of painting and gilding, not put on the bare walls, but upon the mouldings, columns, sculptured ornaments, and figures. The same observations can be made under the porch of the Cathedral at Amiens, and the ornaments placed in 1257 on the top of the transept gables of Notre-Dame were gilt, with grounds of dull red and black. The outside colour was much more vivid than that of the inside; there were bright red tones (vermilion glazed with brilliant red), crude green, orange, yellow ochre, blacks and pure white, rarely blues, outside, the brilliancy of direct light allowing a harshness of colouring which would not be tolerable under the sifted and diffused light of the interior.

I may mention that the late William Burges and I, in our travels together, found traces of colour on the porch of the church of Villeneuve l'Archevêque.

Viollet-le-Duc goes on to say that the whole front of Notre-Dame was not coloured, but only the three doorways with their voussoirs and tympanums, and the niches and statues that bind the doorways together. The gallery of the kings formed a long strip, all coloured and gilt; and above the only parts painted were the arcade with the windows under the towers and the central rose-window; the upper part, lost in the air, was left the colour of the stone. Viollet-le-Duc makes this reflection: "Why do we deprive ourselves of all these resources of art? Why does the classic school pretend that coldness and monotony are the inseparable accompaniments of beauty, when the Greeks, whom they present to us as artists *par*

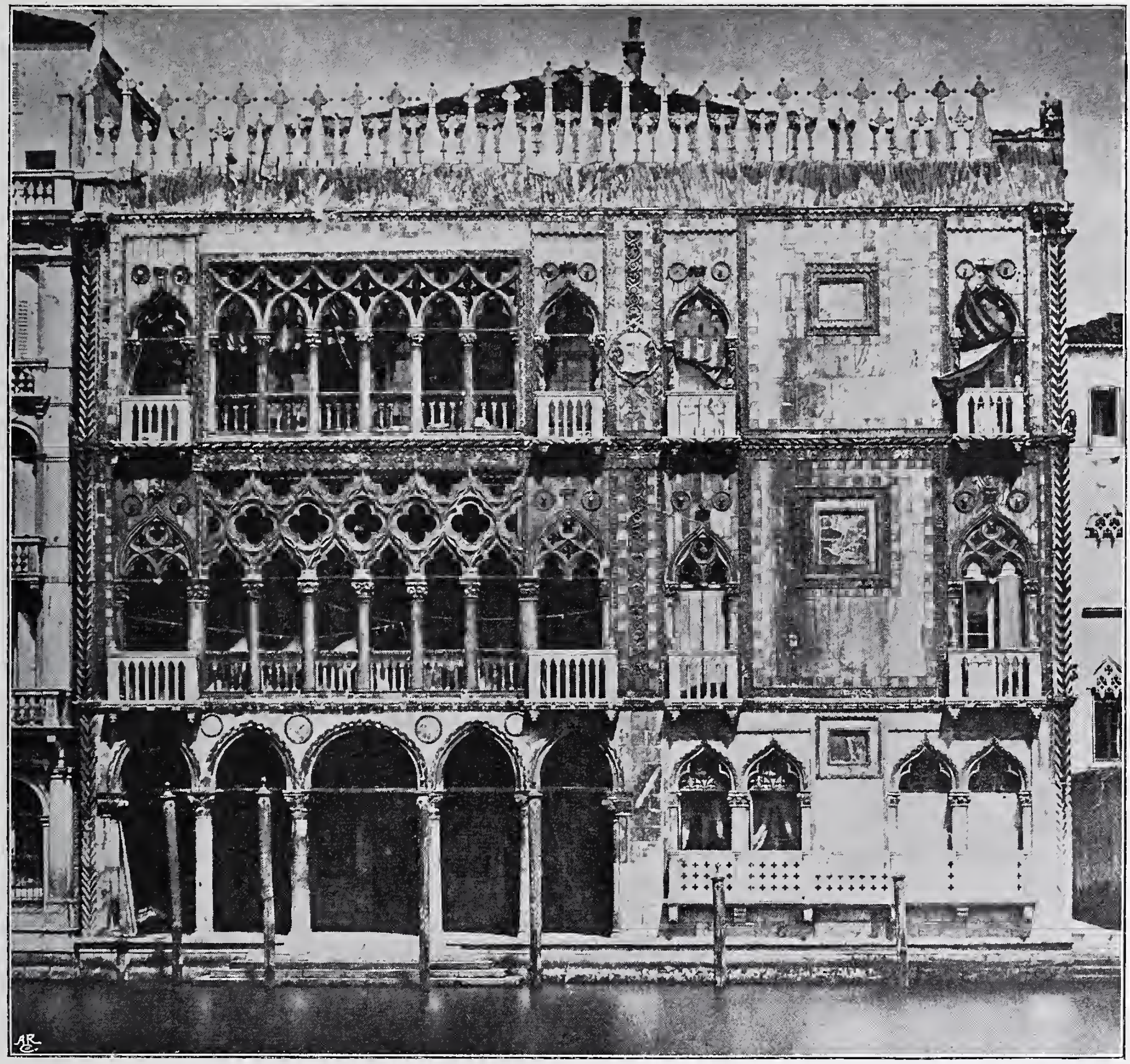


FIG. 2.—THE CA' D'ORO, VENICE.*

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* See "The Ca' d'Oro and its Polychromatic Decorations" [Giacomo Boni], Transactions R.I.B.A., N.S., Vol. III. [1886–1887].

excellence, always coloured their buildings inside and out, not timidly, but by putting on colours of extreme brilliancy?" Mr. G. F. Watts, R.A., saw a fragment of foliage at Halicarnassus just dug up painted with vermilion, turquoise green, and golden yellow.

It is not to be supposed that figures in white marble with a polished surface and of translucent substance were covered with opaque distemper; the flesh at least was delicately glazed with transparent colour. When I was at Constantinople, in talking with Canon Curtis I mentioned that the Greeks always painted their statues, to which he objected; and when I quoted Plato's well-known passage he defended himself by saying it was probably of late interpolation, but I have never heard the authenticity of the passage questioned; and as we know that painters of statues are not infrequently mentioned it seems rather ridiculous to deny the painting of statues when it was a distinct profession. The brother of Pheidias is said to have been a painter of statues, and the gold and ivory of the great iconic statues suggest polychromy. The painted figures of Tanagra and the small figures on the sarcophagi of Alexander's captains that were found at Sidon show that the contention verges on the absurd, and, besides, the use of polychromy on the statue of Giovanni Pisano shows that it was still in vogue in mediæval times.

In one of Sir Lawrence Alma-Tadema's pictures he showed the figure sculpture of the Parthenon painted, so you may have formed an opinion of its effects; at any rate you will be quite certain that Sir Lawrence would not have done anything that spoiled the effect or looked incongruous.

In many parts of Italy bas-reliefs in *gesso duro* are painted exactly like pictures, not to speak of the coloured ware of Luca della Robbia and his school. The Ca' d'Oro at Venice received its name from being gilt, and Commendatore Boni, when in charge of the restorations at the Ducal Palace, found traces of gold and colour on the ornaments and tracery of the Porta della Carta executed before 1500. The bronze horses of St. Mark were once gilt. We know that Nero had a bronze statue of some great Greek artist gilt; but as this was not intended for gilding, it so spoiled its effect that Nero had to pay twice the cost of the gilding for having it rubbed off.

Signor Molmenti in his book on Venice quotes Philip de Comines (Charles VIII.'s ambassador, who visited Venice in 1495) as saying, quite dazzled: "The houses are very large and high and of good stone, the old ones all painted; the others, built in the last 100 years, have their fronts of white marble which comes from Istria, 100 miles from there, and I saw many great pieces of porphyry and serpentine on the fronts."

You may see in Carpaccio's pictures the fronts of houses thus ornamented with painting and gilding. In 1854, when I was first at Venice, remains of old painting, in the shape of figure frescoes, were still to be seen on the fronts of some of the houses; and at Brescia, when I visited it a few years ago, there were the remains of fine figure frescoes and colour on many of the houses. Pictures, except in the case of tombs, go but a small distance back, but in illuminated manuscripts and mosaics we get buildings represented of much earlier date, and these are mostly shown as wholly or partially coloured.

I will just say something of pictures, because in them you can see how coloured buildings look. In one of Giotto's there is a white building with a scarlet cornice, and under the cornice semicircular machicolations, the corbels of which are scarlet, and the semicircular sunk panel above the lintel of the door is filled with geometrical mosaics. Gentile da Fabriano shows red walls with black archivolts, red porphyry caps of columns, and veined shafts, and in another picture grey walls with white lines round the arches, black archivolts, columns of red, and the soffit of a balcony black with scarlet cantilevers.

In a picture of Benozzo Gozzoli, the "Rape of Helen," there is a house of peach-blossom marble, the frieze black with peach-blossom festoons and cherub heads, the columns of the upper loggia white, the soffit of the eaves yellow, with black panels and a scarlet cymatium. In one of Luca Signorelli's pictures grey pilasters panelled and carved are backed by red edges and have gilded caps. The entablature is in red and grey marble, and there is a narrow carved architrave of red marble with grey mouldings at the top, a carved red marble frieze, grey bed-mould and corona, and a red marble cymatium; above the grey line of pedestal, with red carved panels, on which stand square red pilasters with panels of red variegated marble and grey caps. The flank of this house is yellowish grey with the same entablature,

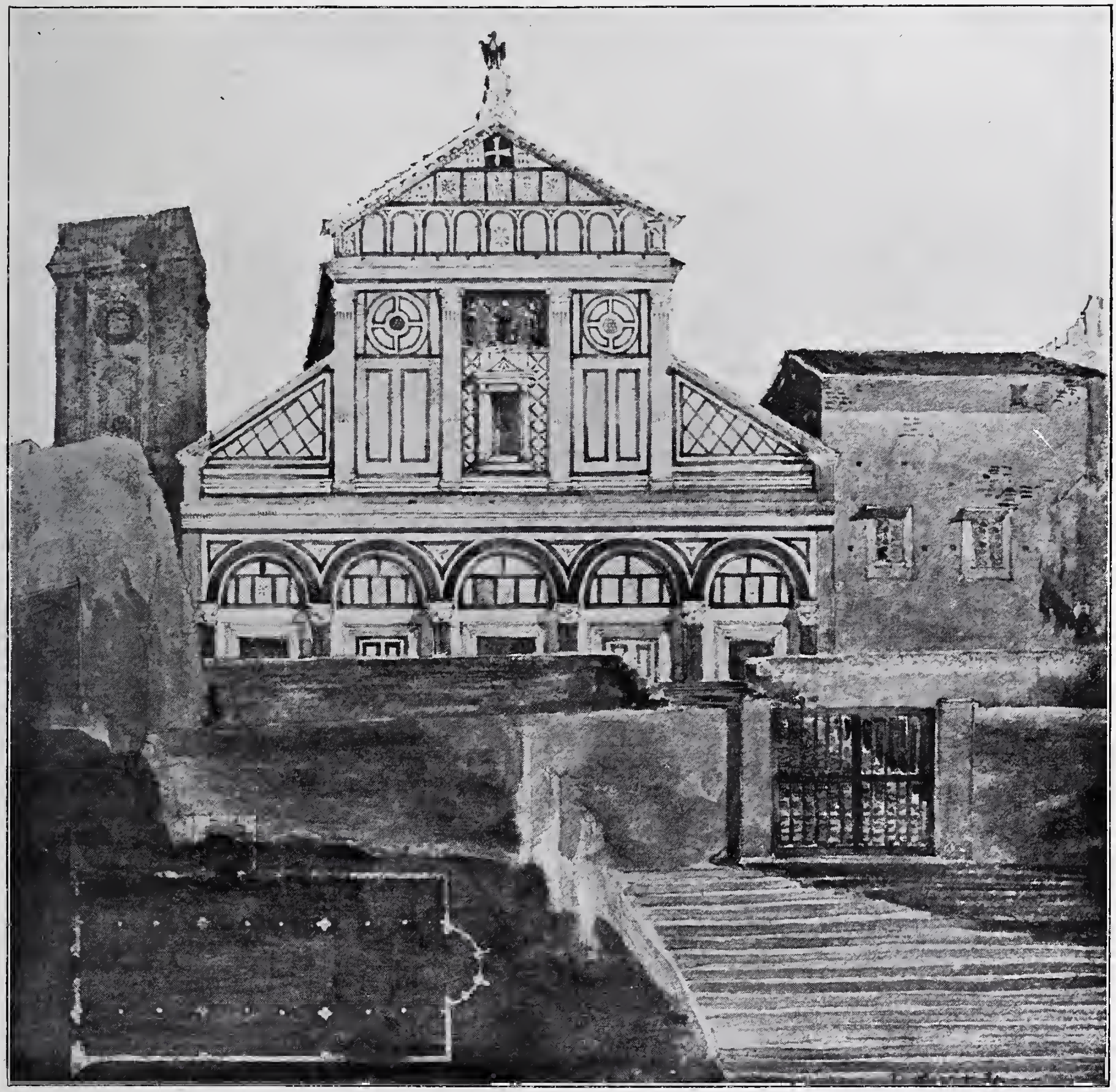

FIG. 3.—S. MINIATO AL MONTE, FLORENCE. EXTERIOR DECORATION IN COLOURED MARBLES, AND GLASS MOSAIC ON A GOLD GROUND.
From a Drawing by Hubert C. Corlette [*A.*].*

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* "On the Use and Value of Colour in Architecture" [Hubert C. Corlette]. JOURNAL R.I.B.A., Vol. VI., Nos. 17, 18, 19.

and three gilt cherubs' heads at the wall. There is a grey house opposite that has red brick work under a flight of grey stone stairs, one bright red line under the string, and the massive stone window jambs and lintels are red with a wide red band under the cornice.

Pinturicchio has two pictures with arcades, one in which the architecture is all gold, the pilaster panels dark blue, nearly black, with gold ornament, and the spandrils and frieze also dark blue or black with gold ornaments, while under the centre of each spandril, and touching the gold archivolts, is a circular gold medallion with figures. Another arcade of grey stone has tall pilasters carrying continuous entablatures, so that each arch is cut off by a pilaster, the panels of which are black and gold with a gold ornament, and the pilasters have gold bases and caps; the spandrils are black with gold angels, and between the gilt caps of the pilasters runs a pale green frieze with gold ornaments. The abacus of the pilaster, which is grey, runs over this band as a capping.

A greatly improved effect is often produced in a coloured front by the substitution of a naturally patterned marble for a plain one: this may be seen in the Magasin du Printemps at Paris, by the late Paul Sédille, where veined marble has been introduced instead of plain white. It was what is now called Pavonazzetto, though not the true Docimeian or Synnadic (from Docimeium and Synnada, towns in Phrygia). A year or two ago Jay's shop in Regent Street was made quite beautiful by some parts of the architecture being painted like veined instead of plain white marble.

I think it best to speak of things I have seen, because by that means you can allow for what the astronomers call my "personal equation"; yet I must speak of countries that I have not seen, Persia and India, because in those countries is to be found the most magnificent exposition of extreme colour applied externally, and executed, too, in that splendid and imperishable material (in a dry climate) enamelled earthenware. Their flat walls, cylindrical minarets and drums, bulbous domes, half domes, and honeycomb work are all covered with richly coloured tiles painted or inlaid in the most beautiful and intricate patterns, and where white, blue, green, yellow, red, and black are used in their fullest intensity. Sir C. Purdon Clarke, who has resided in Persia and secured for England some Persian architects' pattern books, describes the effect of this coloured architecture as being superb, so that he did not desire to see it altered, and could not see how the colour could be improved.

Splendid colour is, as a rule, only to be found in the East, or has been got from there. I strongly suspect that all the fine colour in Europe came directly or indirectly from the East, as it filtered through Constantinople, and skilled men were sent from Constantinople to execute works in different parts of Europe. The churches, mausoleums, and mosaics at Ravenna were, I believe, executed by architects and artists from Constantinople, and probably the mosaics on churches in Rome, Sicily, and elsewhere. We know that St. Mark's at Venice and the Mihrab of the Mosque at Cordova were done by them.

The Crusades enabled the Westerns to see something of the glories of the East, and the plunder familiarised those at home with Eastern colour and workmanship. Afterwards this impression was kept up by the traders who visited the East and trafficked in its goods—the Pisans, Genoese, the Venetians, Portuguese, and the Dutch. There is very little doubt that that very effective adornment, horizontal stripes in different colours, was brought from the East. We see red and black stripes in the buildings of Cairo repeated in the cathedrals at Genoa, Pisa, and Siena, though in Italy the bands are mostly of the dark green marble or serpentine of Prato.

St. Mark's is wholly covered with slabs of Greek, Africano, verde antico, and other beautiful marbles. The shafts of its columns are of green and red porphyry, verde antico, grand antique, and other splendid marbles, and over its doorways are mosaics on a gold ground, while smaller pieces as ornaments and borders are interspersed on its façades. Its crockets are gilt, and at one time the bronze horses from Constantinople were gilt too. You all know the delicate pink-and-white diaper of the Doge's Palace from pictures, if not from the

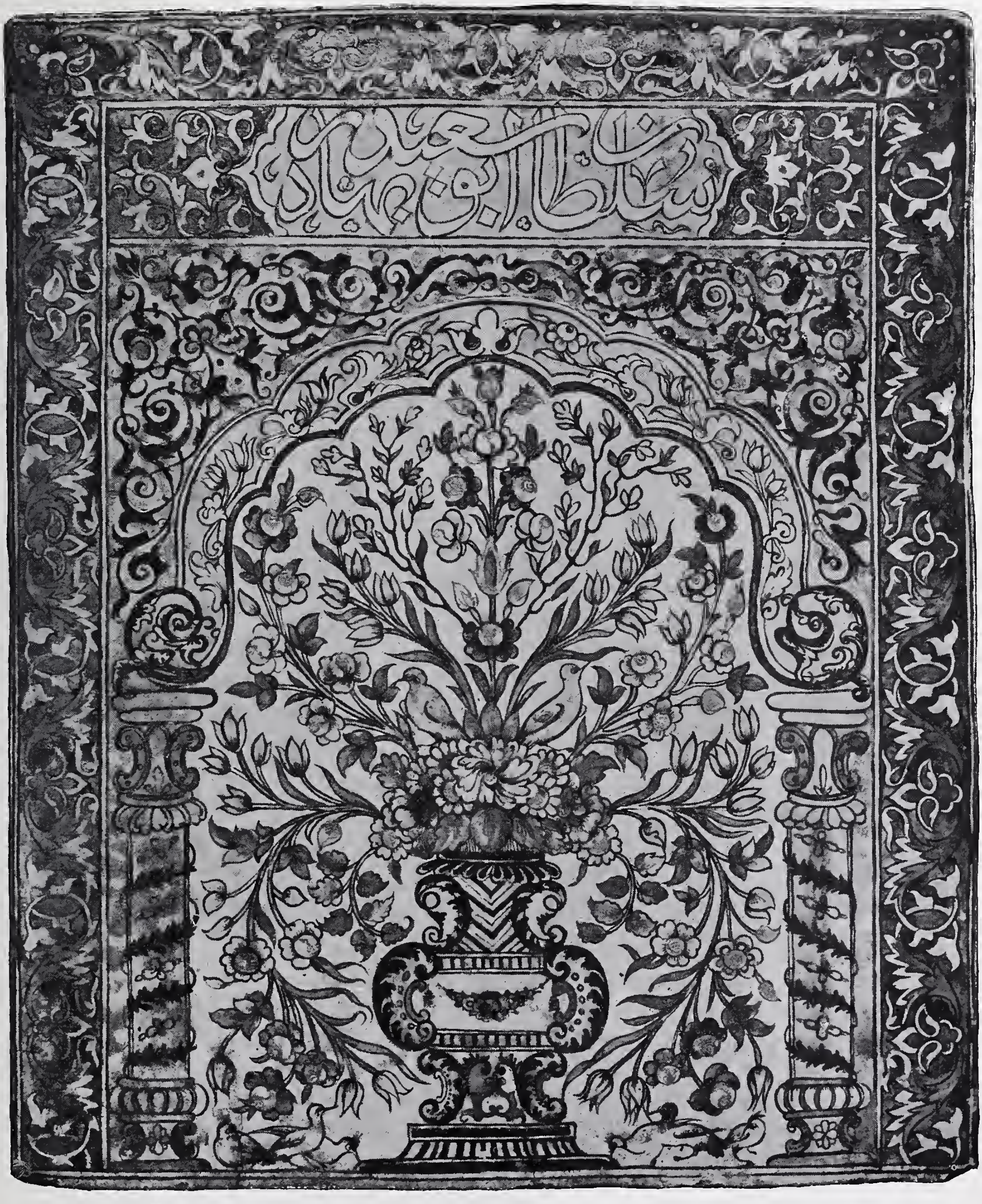


FIG. 4.—COLOURED INDIAN TILE: BLUE, GREEN, BROWN, YELLOW, BLACK, AND WHITE. ACTUAL SIZE, 16″ × 13″.

Palace itself—a reminder of the city of Irak in the *Arabian Nights*, whose walls were built with alternate silver and gold bricks. The bell tower of Florence and the cathedral are covered with pink-and-white marble, with borders and inlaid work of green serpentine.

It is useless to speak of the effects of red brick with white stone, as they are too well known in the form of dressings, strings, stripes and chequer-work.

In many Italian buildings happy effects are got by filling in the ground of carved ornament with mosaic of green, gold, red, black, or other colours. The most striking example of modern external polychromy I have seen is a palace at Berlin. The walls are faced with black and red tiles in a diaper, the window dressings are majolica, and the frieze in coloured glass mosaic on a gold ground; and at the time I saw it some years ago it was not pleasant to reflect that the tiles were probably English, the majolica Minton's, and the mosaic from the English Company at Murano, and that no such complete attempt had been made in our own country.

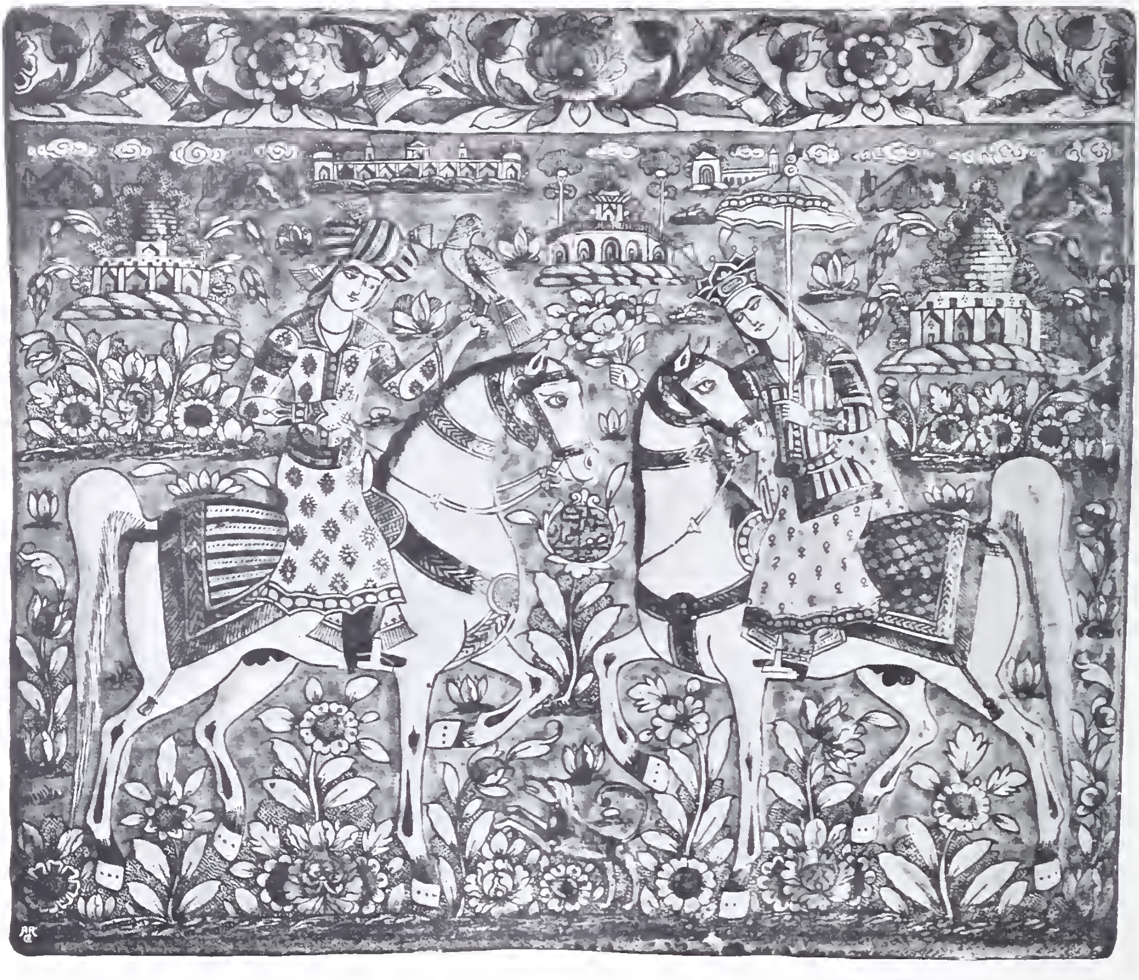


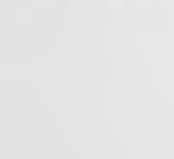
FIG. 5.—ENAMELLED TERRA-COTTA PERSIAN TILE, BAS-RELIEF, IN SHADES OF BLUE, BROWN, PINK, AND WHITE. ABOUT ONE-THIRD ACTUAL SIZE.

In Paris we have the polychromy of the Opera House of a delicate and dignified character, obtained by marble, bronze, and gilding, with a slight sprinkling of enamelled earthenware on the flanks. Charles Garnier's dream of the future of Paris is that of an enthusiast for colour: "The grounds of the cornices will shine with eternal colours, the piers will be enriched with sparkling panels, gilded friezes will run along the building, the monuments will be clothed with marbles and enamels, and the mosaics will make all love movement and colour."

The late Paul Sédille in his Magasin du Printemps has been very successful with his polychromy. When he was in London he was very complimentary on some of our new buildings. He said: "Certain new constructions in London are truly grand, the friezes ornamented with enamelled terra cotta; mosaics on a gold ground become the decoration of the façades. Certain halls of public establishments are completely covered with painted earthenware, developing decorative composition with true style."

There is rather a pretty shop just at the beginning of Kensington High Street, all built of pinkish yellow terra-cotta, with open arches as a shelter in front of the shop-front itself, and much of it is enriched with finely coloured glass mosaic. Other fronts that I recollect are a restaurant in Oxford Street, built by the late Professor Banister Fletcher, where the rustications are of bronze-green enamelled earthenware, and the front is enriched with dull gold ornament in the pilasters; and Pagani's Restaurant in Great Portland Street, which is partially coloured.

A very noble polychromy might be effected by the use of polished porphyries and perhaps of some granites. There are in Norway, or Sweden, or in both, splendid porphyries varying in colour from white to black and of almost all colours. But very few even of the wealthiest people seem to have any inclination to build a beautiful but costly house for themselves, and the freehold sites that remain are very scarce and very costly; and as the fashion for some particular part of the town is constantly varying, even immensely rich people scarcely venture to lay out much money in building a stately palace when they may find in a few years that they are in an unfashionable neighbourhood; and the passion for something old is so great in England that were an Ictinus or a Mnesicles to design the most magnificent mansion in a new style it would have no chance of success by the side of a Gothic or an Elizabethan one.



GERMAN TECHNICAL HIGH SCHOOLS, IN RELATION TO CONSTRUCTION AND ARCHITECTURE,

WITH SOME REFERENCE TO THOSE OF GREAT BRITAIN, PARIS, AND THE UNITED STATES.

By E. W. Hudson [*A.*].

IN the *Diplomatic and Consular Report* (by H.M. Consul at Stuttgart) on German Technical High Schools, just issued by the Foreign Office (May 1903, No. 591), there is evidence of the great advance made by Germany in its provisions for disseminating practical knowledge apart from the old university training. "There is a friendly emulation existing between the different States with regard to the development and equipment of their highest educational institutes." The general aim is "the application of scientific knowledge to industrial purposes." These facts should be carefully considered by our educationalists and statesmen. If the necessity for this dissemination has become apparent to the German people, it needs no argument to show that in our more circumscribed home boundaries it is equally necessary for us; and it behoves us to prepare the rising generation for the struggle which has to be continued to maintain our position in the evolution of art and science, and also in the race for a due share of the world's commerce.

The change in the avocations of the Germans since 1871, when the Empire took concrete form, is as remarkable as the increase in numbers from 39,000,000 to 58,000,000 in thirty years. In 1871, sixty per cent. of the population was engaged in agriculture; now it is only thirty-five per cent. The difference is in great measure an increase to the army of mechanics, traders, and commercially occupied citizens, all seeking to push trade to the ends of the earth, and incidentally to oust the Anglo-Saxons of both hemispheres from their paramount position.

It is vital to the German nation to advance. Following up this need, practical people that they are, they see that one of the chief means to the desired end is the advancement of technical knowledge. The high schools, established and heavily backed by State aid, are working on these lines earnestly and surely, and they are taking rank with the old universities, notwithstanding the glamour and prestige of their venerable names. The Emperor William II. shows a deep and practical interest in the work, realising in the fullest degree its importance to his people; and he, with the Ministers of Justice and of Education, have the immediate supervision of the schools.*

Although something is being done in England in the matter, it is no time to rest at ease and follow a *laissez-faire* policy as if all were well; nor in regard to earnest zeal in working need the English student scorn to take a leaf out of his German brother's book. He need not on that account forswear the attractions of his beloved "flannel and mud," in their proper place and in moderation.

As to the special subjects of architecture and civil engineering respectively, and the part they play in the scheme of German high schools, we find from the Report that in 1884 there were on the staff sixty-seven Professors of Architecture and forty-two of Civil Engineering; but in 1899 there were one hundred and fifty-five in Architecture and sixty-seven in Civil Engineering. In mechanical engineering the number was thirty-eight, raised to one hundred and thirty-five in the year last named, which shows the realisation by the Government of the need for pushing forward the practically scientific as against the art section of study. Not that the latter is neglected—far from it, since the number of Professors of Architecture has been more than doubled.

The course of architectural training extends over four years in the high schools of Berlin, Hanover, Aix, Brunswick, Munich, and Dresden, and three years and a half at Stuttgart.* Civil engineering has four years in all these schools. State aid is very large, and is doubtless a good investment with such serious workers as the

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* The professors are not left to poverty after long service. The superannuation scale begins after ten years' service with 25 per cent., and ends at the fiftieth with 75 per cent. of their salaries.

* At Stuttgart the course of study in the Department of Architecture is laid out as follows:

First Year:—For students from real-gymnasium and upper real school: Technical mechanics; light and shade and illumination; perspective; mineralogy and geology; elements of architecture; building construction; freehand drawing; drawing of ornament; history of art. For students from classical gymnasium: Analysis; trigonometry; differential and integral calculus; practical geometry; analytical geometry; experimental physics; experimental chemistry; freehand drawing; building construction; history of art.

Second Year:—Practical geometry; geological excursions; advanced building construction; history of architecture; architecture; plan drawing; applied perspective; freehand drawing; drawing of ornament; styles of ornament.

Third Year:—Architecture; history of building; architecture of Middle Ages; plan drawing; estimates; materials; freehand drawing; forms of ornament; modelling; decorative design. Term VII. (*half of fourth year*):—History of building; architecture of Middle Ages; plan drawing; water-colour drawing; modelling; decorative design; machinery; elements of physics; political economy.

Germans, whatever may be said of some of the expenditure in England. Taking the year 1901, State aid for the non-Prussian high schools at Stuttgart amounted in round figures to £19,000 out of £26,000 expenditure, in Darmstadt to £12,000 out of £29,000, in Brunswick to £12,000 out of £14,000, Carlsruhe £22,000 out of £30,000; in 1902, for Munich £26,000 out of £44,000, and in Dresden £29,000 out of £32,000; in the three Prussian schools proper of Berlin, Hanover, and Aix, in 1899 (the latest available record) to £68,000. At Dresden alone for 1902–3 the sum of £250,000 was set down for new buildings.

The undeniable thoroughness of the instruction in the schools has not proved attractive to English students. Seventeen per cent. of the students are foreigners. Russia sends the greatest number, and Hungary the next in order. Though the number causes embarrassment, there seems at present no sufficient cause for the authorities to exclude aliens, as I believe is one of the anxieties of our immediate neighbours in regard to the École des Beaux-Arts.

It may not be flattering, but it is true I think to say that however academically good the instruction in architecture may be, the influence of what passes as modern architecture in Germany at the present day might be such that it would have been better for any English student who entered there, and for the cause of British architecture, had he never been born, unless it served as a warning of what to avoid. Even "l'Art nouveau" is Doric simplicity compared with a great deal of modern Teutonic design. Mr. Arthur Symons tells us that "German art is non-existent." At all events it is easier to imitate than to think, and there is always risk of decadence when meretricious and meaningless work is before the student's eyes. When the buildings of classic and mediæval origin which must be put before students in the high schools are compared, *e.g.*, with modern German street architecture the work of some of the leading men in the profession, one is puzzled to see how fruitless the study of such ancient examples has been, and how unadvisable it would be to recommend an English student to enter the German schools.

Even in Paris we have lately seen prizes awarded for designs of street façades which outrage all ideas of chaste, restrained, and monumental architecture; and if such becomes the vogue and their novelty attracts and affects the young Americans studying at the École des Beaux-Arts, American work will be all the worse for it when the students return to practise in their own country.*

Though we in England are not free from risk in the search for novelty, it may be that our restricted facilities for education have not been an unmitigated evil in what is, or we hope is, a transition stage in art. Our principal school—at all events in regard to numbers—the veteran, useful, and unpretending Architectural Association, where more than two hundred students per session are studying for the profession, has done excellent service through years of little encouragement and many difficulties. The grants of the Royal Institute have stood for something in the way of help, but more is wanted to make it a power for good if Britain is to take her proper place in this regard among the nations in future. It should not be left so much to City Companies and private help. Such generosity in the matter of State aid as is found in Germany if accorded to the Association would make its day and evening curricula available at reduced fees, enlarge its scope, and permit branch schools to be established in the provinces for the teaching of architecture. It would give impetus and prestige to the school, and prove of incalculable advantage to our art. Mr. Bolton has just given place to Mr. Maule in the mastership, and the new teacher has our best wishes for a successful and prosperous era at the new premises. There is a chance with fresh energy to revive the dry bones of the old Architectural Museum, so long little better than a dead letter in the alphabet of art. The A. A. scholarships and exhibitions are not numerous. They consist of the Association Travelling Studentship, value £25, with a silver medal; the Association (Silver) Medal, together with a prize of the value of ten guineas; the Essay Prize, value ten guineas, with a silver medal; the Fletcher Bursary, value twenty-five guineas. Two others value five guineas, one of three guineas, and one of a guinea. It is easy to see by comparison of architectural education with Germany and France how backward we are in this matter.

What is possible in the highly taxed German Empire is possible in this country; and one cannot but think that it is far more important than the much debated Registration of Architects that our legislators should have their attention directed to the subject with equal persistence to that applied, mistakenly as it appears to me, to the other.

Turning to London, we have for comparison the *Report by the Technical Education Board of the L.C.C.* published synchronously with the one just considered. This candidly admits its limitations, and states that "the efforts of the Board have been specially directed towards the promotion of distinctly *trade classes*."

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* The President, in his speech at the Annual Dinner, referred to the satisfactory fact of each University of the States having its own recognised architectural school; yet such is the high opinion of the teaching at Paris that professors emphatically advise their most promising pupils to finish their education at the École. And it must be admitted that the pressure is intense in the *ateliers*, for unless the student is prepared to lead a three-year life nearly always *en charrette*, he has no chance whatever of passing the ordeal and taking his "first."

And even here financial limitations are complained of—thus :

> "We feel that the expenditure required to put London in a position to equip itself as well as, say, Berlin is altogether beyond the range of the sums which the County Council has imparted to the Technical Education Board, and even beyond the amount which it could legally spend on technical education. The matter appears to us to be one of national concern. In the United States such institutions are founded by private munificence. We can do no more than report the need, with all the emphasis that we can give to our words, in the hope that, either out of private or public funds, something may be done." *

The people are especially alive to the prominence of electric lighting, &c., in respect of future wage-earning, and the number studying the subject is twice that of students of plumbing, carpentry, or mechanical engineering, which three subjects are about equally patronised. Brickwork and masonry students are about a fourth of the number of electricians. Building construction and quantities are well to the fore.

As to provisions for architectural study the only important paragraph in the Report refers to the Regent Street Polytechnic, where there is a school for young men between 16 and 18 years of age, started in 1891, with lecture-rooms, studios, architectural casts, a library of works on architecture, surveying, and building, chiefly acquired by grants from this Board.

> "The complete curriculum covers three years, and comprises freehand and model drawing, drawing from the cast (outline and shaded), history of ornament, decorative design, building construction, clay modelling, practical plane and solid geometry, architectural design, sanitary science, electricity as applied to buildings, quantities, land surveying and levelling (theoretical and practical), workshop instruction in wood and metal work."

It is gratifying to know that the school is full, and students are being prepared for the R.I.B.A. and other examinations, and ex-students have taken good positions in the world.

As to provisions *in posse*, the Report states that at the Paddington Technical Institute it is intended to provide an architectural lecture-room, seven studios for arts and crafts, and an engineering drawing office.

The eleven schools of art around London also received between £5,000 and £6,000 during the year. Some architectural designing is done here, but not much.*

It will thus be seen that many other young men are desirous of becoming proficient architects besides the 2,346 scheduled by the Royal Institute of British Architects up to the date of the last Report, and when we have added these outside numbers and those studying at the university classes, and when we consider the few teaching institutes available we must exclaim, "What are they among so many?" It may be that real artistic genius might come out without any facilities at all beyond the innate pluck and perseverance of the race in the case of a student who feels the afflatus, and in the study and sketching of old buildings alone he might become an "artist-architect," and the necessary building knowledge would be obtainable in the trade classes that are now available.

It is not clear at present that the new university at Birmingham, like that of Liverpool, will ultimately benefit architectural education; but if a Chair of Architecture is provided, it will be a step in the right direction. Professor Simpson is back at University College, London, after doing good work at Liverpool.

The two Reports which form the text of these notes are in the Library, and are worthy the attention of all members interested in scholastic, technical, or artistic training.

Just after the preceding notes were penned came the announcement by Lord Rosebery of the South African tribute to the value of technical education by Messrs. Wernher, Beit & Co., and others who have drawn wealth from that continent. This offer is a sequel to the patriotic testament of the late Mr. Cecil Rhodes, and no doubt will be contagious. From the little that has at present transpired, however, it does not seem likely that architecture will be touched by the establishment of more technical colleges under this gift, any more than under the Bessemer Memorial project. The offer has, at all events, drawn attention in the public press to the difference between Germany and Great Britain in the amounts available for technical education, to our disadvantage, as shown by the Reports above called attention to; and the £20,000 that the new gift will provide per annum would have to be multiplied by five before it equalled the amount available at Berlin alone,† where it now seems likely, by later advices, that no more foreign students will be taken. Lord Rosebery's announcement has been followed by that of gifts to Reading University, £10,000 from Mr. G. W. Palmer, M.P., and the same sum from Lady Wantage for new buildings. It does not appear, however, that architecture will benefit.

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* There was a grant of £40,000 from the London Parochial Charities.

* The exhibition of the work sent in for the National Competition is now (August) on view at the South Kensington Museum. The measured work is better than the specimens of designing. Eltham Great Hall is a good subject for which special facilities were recently offered, but chancel screens of mediæval and Jacobean periods form the favourite selections.

† The German Government contributes £30 per head towards the education of 3,000 students at Berlin alone.

Although our twelve technical schools cost half a million of money, this is less than the cost of the Berlin institution alone; and the £300,000 cost of Manchester Technical School would not be reckoned much in Germany as a factor in the fierce fight for supremacy. It is satisfactory to know that a Manchester School of Architecture has been established by arrangement between Owens College, Manchester Technical School, and the Municipal School of Art. Several courses are arranged dealing with the history and elements of architecture, drawing and design, freehand and modelling. Professor Capper will begin lectures in October. Professor R. Elsey Smith also begins his lectures at King's College at the same time. He has a well-arranged syllabus and plan of study for the day and evening classes; but the fees are prohibitive to many students

In *A. A. Notes* for August, Mr. A. N. Prentice advocates a National School of Architecture. The plea comes *dextro tempore*, but I fear we shall have long to wait for such a desirable result.

If the late Mr. Arthur Cates, who had ever in mind the need for the higher education of architects, had been spared to us, he would no doubt have pressed home this subject with his usual earnestness; in fact, it was his intention, as we were informed, to deal with the German system, in continuation of his articles in the JOURNAL,* had not his life been suddenly cut short, three months after his appointment as Chairman of the "Board of Studies for Fine Art" at London University. Almost his last words published in these pages were a plea for the excision of "shoddy" qualifications. One cannot doubt that the idea of a National School of Architecture would have had his active support. But the attention bestowed in France upon the education and status of architects since the days of Louis-Philippe, and even long before, has not been accorded here; and with our slow movements it may take years to get such a result, or a diploma conveying not only distinction, but a possible opening into a high order of national service in the architectural cult, and its active practice in erecting national edifices.

But to which of our representatives in Parliament could we appeal as being sufficiently interested in the subject; or to whom can we to-day justly apply the pseudonym of "the Hon. Member for Architecture"? In regard to what national building here was ever such a triumph accorded as to the late Charles Garnier for the Grand Opera House, Paris? The attitude is one of indifference, and the chief care is to cut down expense.

But there is some consolation in the singular fact that the power of the British race—seemingly admitted in high quarters, if not generally so—of blundering through and coming out near the top in so many undertakings, national and individual, does not desert it in the practice of architecture, and it is not from mere insular pretension that we may say that all the higher education of competing nations in architecture has not, on the whole, had the result of eclipsing our own productions, which we can honestly assert have still considerable claim to classic simplicity and nobility, even if at times they become commonplace in character, and if, *e.g.*, in some street façades imagination runs riot, or logical construction is stultified by heavy superstructures over plate-glass shop-fronts. Much restraint must even now be exercised if the paramount position which M. Paul Sédille gave us in domestic architecture some years ago is not to be lost by the designs from that, we will hope decreasing, school of masterful ugliness which apparently mistakes oddity for beauty.

But even the realisation of our most ardent hopes in the matter of architectural training still leaves the all-important question of the future of these thousands of young architects unsolved. Where are they, when proficient, to obtain the work necessary for a modest subsistence? Even the great towns of our two new colonies in South Africa are at present well supplied, and in some cases overdone, with members of the profession who are competing on equal terms with men in the Mother Country for large Government works out there. The American Ambassador tells our aspirants that they may come to the United States and find a happy hunting-ground, but they must all be "of the highest skill and character." Let us trust these Elysian fields may not prove a mirage for some of them in the near future. Increase in their number at present we can scarcely wish: increased facility for perfecting their knowledge is a different matter, as to which all may hope if few can work for. But to what powerful influence may we look for the establishment of *un service d'architecture*; and to what noble hand for raising architecture to her proper level of recognition and honour as the mother of the arts?

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* American University training is dealt with in articles in Vol. VIII., and the curricula of Columbia and Cornell Universities, of Boston Institute, and Harvard, as well as those of the Paris *École des Beaux-Arts* and *L'École Spéciale d'Architecture*, are given.

INCORP.
1837
1887

9, Conduit Street, London, W., 29th *August* 1903.

CHRONICLE.

Holborn to Strand Improvement.

The Improvements Committee of the London County Council intimate that they propose after the summer recess to bring up a definite recommendation as regards the northern frontage of the Strand between St. Mary's and St. Clement Danes. Meanwhile they report as follows :—

We are giving careful consideration to several suggestions which have been made to us for the alteration of the line of frontage already adopted by the Council for the northern side of the Strand between the church of St. Mary-le-Strand and that of St. Clement Danes, and we think it right, before deciding upon any definite recommendation to the Council, to report the facts in connection with the several proposals which have been laid before us.

The Holborn to the Strand improvement now being carried out by the Council received the sanction of Parliament by the London County Council (Improvements) Act, 1899, and it will be within the recollection of the Council that before the scheme as submitted to Parliament was approved by the Council, we consulted the Royal Institute of British Architects, with the result that the scheme which was finally adopted by the Council was one which embraced the suggestions made by the Royal Institute after we had slightly modified the Institute's plan in order to make the crescent road (Aldwych) connecting the new main street with the Strand more symmetrical. By this scheme a minimum width of 100 feet was to be provided for the thoroughfare of the Strand, as well as for the streets leading to Holborn and now named Aldwych and Kingsway. The width of the Strand immediately to the east of its junction with Aldwych at Wellington Street was proposed to be 100 feet, and a similar width was provided for the Strand immediately to the west of its junction with Aldwych at St. Clement Danes Church. This width gradually increased to about 160 feet to the east and also to the west of St. Mary-le-Strand Church, in order to provide a minimum width of 50 feet for the traffic on each side of the church. In the large open space between the eastern end of the crescent site and the western side of St. Clement Danes Church, the Council agreed, on 13th March 1900, to allot to the Gladstone Memorial Committee a site for the purpose of the monument proposed to be erected by the Memorial Committee. Nearly all the houses situated between the Strand and Aldwych have been acquired and demolished ; some of the land has been staked out and the Council has invited offers for building leases.

We have recently had before us, however, a letter, dated 21st May 1903, from the Royal Institute of British Architects calling attention to a letter which appeared in *The Times* on 4th May 1903, from Mr. Hamo Thornycroft, R.A., suggesting a considerable amendment of the Council's line for the northern frontage of the Strand between the two churches, with a view (*a*) to bringing the church of St. Mary-le-Strand into alignment with the centre of the thoroughfare ; (*b*) to making the direction of the thoroughfare aim at the front of the church of St. Clement Danes and not at one corner of it ; and (*c*) to securing for the future a good view of the Courts of Justice to all approaching that building from the Strand on the west. The Royal Institute has stated that although in entire artistic sympathy with Mr. Thornycroft's scheme, it is fully alive to the difficulties, financial and otherwise, in the way of its execution, and the Royal Institute has therefore suggested a modification which it thinks could be carried out with a comparatively small sacrifice of pecuniary interest, and would practically secure the advantages of Mr. Thornycroft's scheme. By Mr. Thornycroft's proposal, the portion of the Strand between the eastern end of St. Mary-le-Strand church and Aldwych would be widened to an average width of 150 feet ; by the Royal Institute's plan the average width would be about 120 feet. The Royal Institute has contended that by carrying out its plan a better view would be afforded of both churches from either end, and also of the Law Courts, and the apparent narrowing of the Strand at the point in question would be obviated, and that, although the eastern end of the crescent site would not be entirely symmetrical with the western end, this would be observable only on paper and would not be seen when the actual work was carried out. The Royal Institute has also pointed out that by further widening the Strand in the manner suggested the sharp awkward corner at the eastern end of the crescent site, as contemplated by the Council's plan, would be avoided.

We have also had before us a letter from the Royal Academy of Arts suggesting that the fullest consideration should be given to Mr. Thornycroft's proposal, and a letter from the Further Strand Improvement Committee, forwarding a plan showing an amended line suggested by that Committee, the line being somewhat similar to the one originally proposed by Mr. Thornycroft.

We were impressed with the importance of the suggestions made by the Royal Institute, and we accordingly invited certain of its representatives and also Mr. Thornycroft to meet us on the site in order that they might fully explain their proposals to us, and we have since had before us a plan submitted by the Royal Institute showing definitely the scheme which it now proposes.

For the information of the Council we have caused a cartoon plan to be prepared and to be hung in the Council chamber showing by *black* lines the scheme as contemplated by the Council ; by *dotted blue* lines the considerable modification originally suggested by Mr. Thornycroft in his letter to *The Times* ; by *red* lines the proposal now made by the Royal Institute of British Architects ; and by *green* lines a suggestion laid before us by the Council's superintending architect, by which plan the average width of the Strand would be 115 feet. It is right to state that Mr. Thornycroft at his interview with us has expressed himself as being generally in accord with the proposal now made by the Royal Institute.

If the modification originally suggested by Mr. Thornycroft, and shown by *dotted blue* lines on the cartoon plan, were carried out, it would necessitate the addition to the public way of the Strand and Aldwych of land which would otherwise be let for building purposes and is valued by the Council's valuer at £350,000 ; the loss of recoupment if the Council were to adopt the amendment suggested by the Royal Institute of British Architects, as shown by *red* lines upon the plan and now accepted by Mr. Thornycroft, is estimated at £70,000 ; while the loss to the Council if the suggestion made by the Council's superintending architect, and shown by *green* lines on the cartoon plan, were adopted, is estimated at £59,000.

In order that members of the Council may have an opportunity of studying the question on the site, we have arranged for the erection of poles and boards upon the vacant land on the northern side of the Strand between the two churches, the boards being painted in different colours to show the several modifications suggested, the colours used being similar to those employed for the cartoon plan to which reference has already been made.

We propose to give further consideration to the subject, and to bring up a definite recommendation to the Council after the summer recess ; but we have thought it well to at once inform the Council of the several suggestions made to us.

The R.A. Architectural Schools.

New Rules and Regulations for admission to the Schools of the Royal Academy come into force next January. Those material to architectural students are substantially as follows :—

Admission to the Schools can, subject to passing the required examination, be obtained at any age. But no student is eligible to compete for any scholarship, prize, or medal who is more than twenty-eight years of age on the date fixed for the delivery of the competition works, or of the works for the admission of Probationers.

All instruction in the Academy is gratuitous; but the student must provide his own materials.

Applicants for admission must obtain from the Registrar, through the written request of any member of the Academy, or other artist or person of known respectability, a printed form, to be filled up and delivered at the Royal Academy, together with a certificate of birth and the works required as specimens of ability, on or before January 1st or July 1st. Architects must also send a certificate from an architect member of the Royal Academy, of the Royal Institute of British Architects, or any other public institution for teaching Art and Science, certifying that the applicant has followed up the study of architecture and architectural drawing, and has acquired a fair degree of proficiency in the same. The age and sex of the applicants must in all cases be stated on the face of the works submitted, and also the place where they have studied.

For architects the works required are :—

(1) An elevation and plan of a building, or some part of a building, to be done from the candidates' own notes and measurements, which shall be submitted with the drawing ; the notes and measurements to be taken from the building itself; (2) Geometric elevations of the Doric, Ionic, and Corinthian Orders, with their entablatures complete, to ½-inch scale, the columns to be 24 feet high ; (3) an original perspective sketch in pencil of an existing building, or part of a building, on a quarter-sheet of imperial paper ; (4) a drawing of a piece of architectural ornament from a cast, shaded in pencil or chalk, or tinted, and of the size of the original. All the drawings required must be on paper, and unmounted. Or there may be submitted instead of works (3) and (4) a portfolio of not less than six original sketches of architecture, of which one shall be an original design, and at least two others shaded studies of architectural sculptured ornament.

The above specimens of the applicants' ability will be submitted, within two weeks of the date of their being sent in, to the Council, who will admit as Probationers those whom they consider qualified to try for admission as Students.

On his admission as Probationer the architect student has to attend on a fixed day at the Academy and there execute the following work :—

(1) A drawing from memory of one of the Orders, to ½-inch scale, the Order and height of the Order to be fixed by the Council, and no book or other aid allowed, to be done in one evening of two hours, 6 p.m. to 8 p.m. ; (2) a drawing from a cast, the size of the original, to be done in three evenings of two hours each, 6 p.m. to 8 p.m. ; (3) an elevation and plan of a building, or of some part of a building, or of one of the larger architectural works in any museum, to be done in two evenings of two hours each, 6 p.m. to 8 p.m., from the Probationer's own notes and measurements, taken from the building itself ; the notes and measurements to be submitted to the Council ; (4) an architectural design, to be a subject chosen by the visitor for the time being, to be done in six evenings of two hours each, 6 p.m. to 8 p.m. ; the drawings to be carried far enough to explain the design, but not necessarily to be finished, it being understood that the merit of the conception will chiefly be considered ; a rough sketch to be done on the first evening which must be generally adhered to in working out the design.

In addition to submitting the above works, architect students must pass an examination in perspective and the history of architecture. Successful Probationers will be admitted Students of the Royal Academy for a first term of three years. At the end of the three years, subject to the fulfilment of certain conditions and the passing an examination, students will be admitted for a further period of two years. The full period of studentship is limited to five years and cannot be extended or renewed. Applicants who have been unsuccessful in their first endeavours to gain admission as Probationers can renew their application at any subsequent period, by again going through the prescribed forms ; but the works submitted must not be the same as those sent in on any previous occasion.

School of Architecture, University College.

The courses for architectural students at University College, now under the direction of Professor F. M. Simpson [*F.*], have been entirely rearranged. A three years' course has been instituted for students before they enter an architect's office. At the end the College certificate is granted, and to the two most successful students the Donaldson Silver Medals are awarded. The architectural work commences at once, but, in their first year, students are required to attend some classes in general subjects. Students will draw from casts and from life, will attend the lectures on Hygiene, and the Professor of Engineering will deliver special lectures for them on iron, steel, &c., and the testing of materials. The College handbook states that the course is framed, in the first place, to provide a systematic training in the practical and æsthetic sides of architecture and in subjects closely allied to it ; and, in the second, to encourage students to continue their general education, and so bring them into touch with other students in other departments who are pursuing different courses of study. The College possesses in its Slade School of Fine Arts, its large Engineering Laboratories, and its comprehensive Arts and Science classes, valuable aids to a school of architecture. Advantage will be taken of these, so far as is possible, having regard to the limited time at the student's disposal, so that the course shall not be entirely on technical lines, but on liberal lines also. To further this, stress is laid on the necessity for a thorough grounding in the history of architectural development.

Students who have taken their B.A. degree at any University are exempted from the Matriculation Examination and from the general subjects mentioned under (*a*) in the first year, and can obtain the College certificate at the end of two years instead of three.

The Examinations for the Certificate are held twice each year, beginning on the second Tuesday in May and the fourth Tuesday in September. Candidates must pass in (1) English, (2) Mathematics, and in two of the following subjects, one only of which may be a modern language, (3) and (4) Latin, Greek, French, German, Italian, Spanish (or another modern language may be accepted if two months' notice is given), Elementary Physics, Elementary Chemistry, Architectural and Freehand Drawing, Elementary Mechanics.

The composition fees are 45 guineas for the first, and 35 guineas for each of the two following years. These admit to all lectures and classes of the course. The following is the syllabus :—

First Year.

(*a*) Three of the following :—History (Ancient or Modern); English; French; German; Mathematics; Chemistry; Elementary Mechanics; Junior Graphics.

(*b*) Drawing from the Antique, two half-days a week.

(*c*) Building Construction.

(*d*) History of Architectural Development.

Second Year.

(*a*) Engineering Class Special Course.

A Course will be delivered by the Professor of Mechanical Engineering dealing with iron and steel construction in buildings (roofs, girders, stanchions, &c.) and laboratory tests on cement, bricks, stones, concrete, timber, iron, steel, &c.

(*b*) Drawing from Antique or Life, two half-days.

(*c*) Perspective.

(*d*) Building Construction.

(*e*) History of Architectural Development.

(*f*) Surveying.

In their Second or Third Year students are advised to attend the evening lectures on Quantity Surveying.

Third Year.

(*a*) Hygiene.

(*b*) Modelling, two half-days a week; or Life-Drawing, two half-days a week.

(*c*) Architectural Planning and Design.

(*d*) History of Architectural Development.

Third Year Students are advised to attend the College lectures on Greek and Egyptian Art. Students who receive special permission will be allowed to work in the classes of The Trades' Training School, Great Titchfield Street, during their Second and Third Years.

BUILDING CONSTRUCTION AND DESIGN.

First Year.

Lecture. Wednesday, 11 to 12.

Brickwork, masonry, concrete, mortar; carpentry, slating, tiling, external plumbing; simple iron roofs, concrete floors; stone and concrete stairs and the materials.

Studio Work. Exercises are set bearing on the subjects lectured upon.

Second Year.

Lecture. Tuesday, 10 to 11.

Soils, foundations, hollow walls, joinery, plastering, internal plumbing, painting, glazing, drainage, shoring, underpinning, and the materials.

Studio Work. Exercises as above.

Third Year.

Lecture. Wednesday, 10 to 11.

The planning and designing of simple buildings, which includes further exercises in the different trades previously lectured upon. Designs will be worked out and detail drawings made. Specifications, &c.

The lectures will be delivered when necessary, and will deal with the requirements and chief points which have to be observed in each subject.

Visits will be paid from time to time to buildings in course of erection, workshops, &c.

HISTORY OF ARCHITECTURAL DEVELOPMENT.

First Year.

Lecture. Friday, 11 to 12.

(*Third Term only.*) Greek and Roman mouldings and ornamentation; Greek buildings, their plans and characteristics.

Studio Work. The Greek and Roman orders.

Visits will be paid to the British Museum.

Second Year.

Lecture. Friday, 10 to 11.

Roman buildings: their plans, materials, and construction. Early Christian and Byzantine Architecture in the East and in Italy. Romanesque Architecture in Italy, France, England, Germany, &c.; introduction to Mediæval (Gothic) Architecture; the development of groining, &c.

Studio Work. The plans, detail, and construction of the above.

Third Year.

Lecture. Tuesday, 11 to 12.

Mediæval (Gothic) Architecture in England, France, Germany, and Italy. The Architecture of the Renaissance in Italy, France, England, Germany, Spain, &c.

Studio Work. Sketching plans, details, &c.

In the second and third years visits will be paid to buildings of interest in and near London which are examples of the different periods lectured upon.

Students not wishing to go through the Certificate Course can take merely the Architectural and Drawing from the Antique Classes, devoting the whole of their time to these. Fees, 30 guineas for any one year, or 12 guineas a term.

Students can attend the History of Architectural Development lectures without joining a Studio Class; but Students cannot attend the Building Construction lectures without joining a Studio Class.

Evening Classes for Working Drawings, Building Construction, and Measuring and Estimating, at very moderate fees (the expense being borne by the Carpenters' Company), will be held under the direction of Professor Simpson. These Classes are free to Students entering for any of the Courses named above.

Manchester School of Architecture.

The Manchester School of Architecture has been established pursuant to arrangements made between the Owens College, the Manchester Municipal School of Technology, the Municipal School of Art, and the Manchester Society of Architects. On the advisory Committee are Messrs. J. W. Beaumont [*F.*], Councillor Brocklehurst, M.A., J. F. Cheetham, B.A., Neville Clegg, Alderman Sir James Hoy, LL.D., Paul Ogden

[*F.*], The Principals of the Municipal School of Technology and of the Owens College, Professor Schuster, Ph.D., F.R.S., Professor Tout, M.A., Charles Rowley, M.A., Councillor Wilson. Professor S. H. Capper, M.A. [*A.*], is leaving the McGill University, Montreal, to take up the duties of Director.

The following courses have been arranged, subject to such modifications as may be found requisite on Professor Capper's arrival, viz. :—

(1) History of Architecture (Tuesday and Thursday, 9.30 to 10.30).—A general survey of Architectural History from Ancient Egypt to modern times, with special reference to the evolution of styles and to constructional forms and methods. The course includes: Ancient Egypt and Assyria; Greece; Rome; Byzantine and Early Christian Architecture; Romanesque; Monastic; Gothic; Renaissance.—Fee £2 12*s.* 6*d.**

(2) Elements of Architecture (Friday, 11.30 to 12.30). —The Classical orders, Greek and Roman, their mouldings and details; arcading, Classical and Gothic. Gothic mouldings and details; their construction and design; elements of architectural effect; composition and style.— Fee £1 11*s.* 6*d.**

(3) Architectural Drawing and Design.—Studies of the orders; rendering with pen and brush. Elementary design.

The Architectural Drawing Rooms are open both forenoon and afternoon for the study of the programmes and exercises set in connection with the lectures on the Elements of Architecture and in the class on Architectural Drawing and Design. The Professor of Architecture will examine and criticise the work on certain days.

(4) Freehand Drawing and Modelling.—Days and hours to be announced subsequently.

Courses are to be arranged for a second and third year, and also classes in Building Materials and Construction, Descriptive Engineering and Sanitary Engineering.

The Revised Forms of Contract [p. 416].

Copies may now be had of the *Form of Agreement and Schedule of Conditions for Building Contracts* issued under the sanction of the Royal Institute of British Architects in agreement with the Institute of Builders and the National Federation of Building Trade Employers of Great Britain and Ireland. There are two forms—one being applicable where Quantities form part of the contract; and the other where Quantities are not included. The indorsement of each form bears representations of the seals of the R.I.B.A., the Institute of Builders, and the National Federation. The documents are on sale only at the offices of the Institute and of the other societies mentioned, at the price of 1*s.* a copy.

Fifth International Congress of Architects, Madrid.

Members are reminded of this Congress, which takes place from the 6th to the 13th April 1904. Particulars have already been printed in the Journal of the 9th May. Members who desire to contribute communications on any of the subjects which will be discussed at the Congress are requested to send them to the Secretary of the Institute before the end of September. The Secretary will be glad to have them translated into French (as is necessary) if desired, and forward them to the Secretary of the Congress. Communications must reach Madrid by the 30th September. The subjects are as follows:

(1) L'Art Moderne (or what is so termed) in Architectural Work.

(2) The Preservation and Restoration of Ancient Monuments.

(3) The Character and Scope of Scientific Studies in the General Training of the Architect.

(4) The Influences of Modern Processes of Construction on Artistic Form.

(5) Artistic Copyright in Architectural Work.

(6) The Training of Workmen.

(7) The Influence of Administrative Regulations on Contemporary Private Architecture.

(8) Expropriation of Works of Architecture.

(9) Is it desirable that the Architect should be made to intervene as Arbitrator in the Regulation of the Relations between Masters and Workmen, and in the Disputes that arise between them?

The new Professor of Architecture at Montreal.

Mr. Percy E. Nobbs [*A.*], M.A.Edin., has been appointed to the McDonald Chair of Architecture at McGill University, Montreal, in succession to Professor Capper, who is returning to England to undertake the direction of the Manchester School of Architecture. Mr. Nobbs won the Tite Prize in 1900, and is the Owen-Jones Student of the present year.

Shakespeare's Birthplace.

The Plain Truth of the Stratford-on-Avon Controversy concerning the fully-intended Demolition of Old Houses in Henley Street, and the Changes proposed to be effected on the National Ground of Shakespeare's Birthplace, a pamphlet by Miss Marie Corelli, has been received from the publishers, Messrs. Methuen & Co., and may be seen in the Library. It claims to be "an exact statement of facts connected with the recent proposition of the Trustees of Shakespeare's Birthplace to destroy genuine Shakespearean property, and their intention to use, as part of a Carnegie Free Library, an ancient house of Shakespeare's own time, thereby 'endangering the stability of its structure,' according to a report just furnished to the British Archæological Association by their Hon. Secretary." The pamphlet consists of about seventy pages of text and a number of illustrations, among others the birthplace as it has appeared at various dates—in 1769, 1820, 1847, and in the present day; the new Free Library and Technical Institute as intended before the discussion started by Miss Corelli; a fancy sketch of the proposed Library, by Mr. Edgar Flower, as suggested after the abandonment of the first plan; and the present idea of the Library sketched from Mr. Flower's drawings as exhibited in Henley Street.

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* The usual college entrance fee of £1 1*s.* or sessional fee of 7*s.* will also be payable.

LEGAL REGISTRATION OF ARCHITECTS.

19 Craven Street, Strand, W.C., 1*st August* 1903.

To the Editor of the JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SIR,—Since writing my last letter to you, and after reading those of Mr. Hadfield and Mr. Seth-Smith which appeared with it in the recent issue of the JOURNAL, it has occurred to me that a concise description of the Registration Bill as at present drafted might be useful. This, with your permission, I would venture to offer, as a member of the Institute who has been intimately connected with the Registration movement since its initiation, and who has taken part in almost every discussion, whether upon general principles or matters of the minutest detail, which has engaged the attention of the Registration Bill Committee since the first draft of the measure was prepared by Mr. Robert Walker, of Cork.

The problem which presented itself was that of producing a Bill which would provide a satisfactory minimum standard of qualification for all aspirants, which, while protecting the public against incompetency, should in no way hamper the development of the highly gifted; safeguard the right to practise architecture possessed by all who at present are earning their livelihood by doing so; secure a high standard of professional morality by exacting severe penalties for misconduct; and establish efficient machinery for the accomplishment of these objects, utilising such machinery as already exists, and strengthening it wherever necessary.

This problem so closely resembled that with which the medical profession successfully grappled, after a fight which was as strenuous and as long drawn out as is that now in progress in the architectural profession, that Mr. Walker thought he could not do better than go to the Medical Act for his inspiration, following it as closely as circumstances would permit. The Medical Act, he argued, has eventuated in the protection of the public and in the development of medicine and surgery to an unprecedented extent, while imposing no hardships; and he saw no reason why a similar Act applied to architecture should not have similarly beneficial results.

The Medical Act places the control of the medical profession in the hands of a Medical Council, whose members are appointed partly by the Privy Council, as representing the Government of the country, and partly by medical practitioners. This Council has power to admit to the Register of medical practitioners, and under certain circumstances to remove from that Register, which is managed by officials under its direction; and it supervises the examinations, ensuring a satisfactory standard in accordance with the gradual advance of medical and surgical knowledge; but it does not itself examine, though it has power to do so under certain possible, if unlikely, circumstances. It also compiled the first Register, a delicate and difficult task, now almost forgotten; but it succeeded, and the machinery provided for the purpose proved efficient.

Without defining the meaning of the words "Doctor," "Surgeon," or "Medical Practitioner," the Act has nevertheless successfully precluded unqualified men from adopting these titles and from practising medicine and surgery; while all properly qualified men of good character are entered on the Register and allowed to practise, whether their qualification be obtained in England, the Colonies, or abroad.

How similar provisions to achieve similar results are made in the Architects' Bill must, I fear, be considered in a subsequent letter, if you, sir, will allow such to appear; for this has already, I fear, exceeded the usual limit of length, and on that matter there is much to say.

Yours faithfully,
G. A. T. MIDDLETON.

46 Lincoln's Inn Fields, W.C., 23*rd August* 1903.

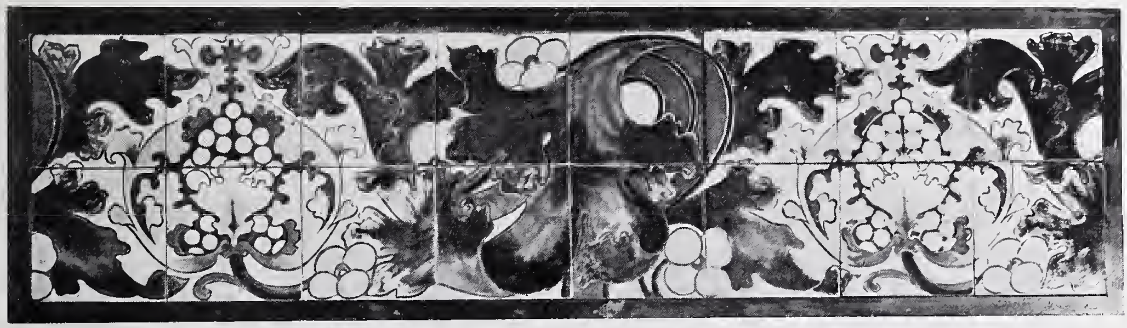
To the Editor of the JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SIR,—We welcome Mr. Hadfield as a provincial contributor to the discussion of this subject, but he disappoints us by doing no more than patting Professor Pite on the back. We search in vain for one fact or argument that we can place in opposition to the mass of evidence already brought forward in favour of this great reform.

Either he has not heard or it is nothing to Mr. Hadfield that there is a consensus of representative expert opinion on the Continent (where the profession admittedly cares for and knows more of the art of architecture than we do) in favour of the legal protection of the title of Architect. This one fact ought to convince Mr. Hadfield and his "everybody who approaches the subject in a sincere spirit" that the subject is worthy of careful consideration, and that the advancement of architecture has been considered by advocates of registration as the one thing needful as compared with any advantages the profession or the Institute reaps thereby in the future.

Possibly Mr. Hadfield's is only a preliminary canter, and we may look for something more worthy of him in a further letter.

I am, Sir, yours faithfully,
W. H. SETH-SMITH.



Painted Tile Frieze in Salt-glazed Stoneware. (Doulton & Co.)

COLOURED TERRA-COTTA.

ROYAL ACADEMY LECTURES 1903. — IV.

By Professor Aitchison, R.A.

PAST PRESIDENT, ROYAL GOLD MEDALLIST.

WHEN one considers that every natural object is coloured by Nature—and mostly beautifully—it seems absurd to object to man's work being coloured too. We have got so accustomed to the want of anything but objectionable colouring on buildings, that beautifully coloured buildings strike most persons as an innovation that they do not like, because for the most part they have rarely seen or noticed such applications before; but, as I showed you in my last lecture, almost all nations up to the time of the Renaissance either used beautifully coloured materials or supplemented them with colour. I know some years ago I was advocating the use of colour on houses and buildings generally to an artist, and he said, "I do not see any other way of making any permanent colour but by pottery, and I doubt if you yourself would like to live in a town where all the buildings were of china"; but I think that if the colour were good I should prefer passing through streets of crockery rather than through those of the present dusty, dingy, and soot-begrimed brick. I must say that the little piece of blue and white tiling over what used to be the margarine shop at the corner of Soho Street was a most agreeable relief to me from the ordinary besmutted brick. It was like a note of joy in the general dreariness.

Enamelled terra-cotta struck the Pisans so forcibly with its beauty that when they had taken Majorca from the Saracens they used the basons and plates they found there to decorate their churches and the fronts of their public buildings. It is from enamelled terra-cotta coming from Majorca that enamelled earthenware was called majolica. Much of the ware of Luca della Robbia that was intended for buildings not only is large in form but is majestically coloured.

Of course I do not desire to see horrible discords of colour spread over all our streets; but the English certainly have some taste for colour, and those who design the coloured fronts should be subject to some controlling colourist to prevent the streets being made more hideous than they now are. There is no reason that I can see why public buildings should not be monumentally coloured.

The simplest and perhaps finest pieces of polychromy I recollect are some of the tombs in the Badía at Florence: the central slab in the upper part of the tomb is generally of dark purple porphyry, and this against the yellowish marble makes a very effective contrast, and gives a dignity and solemnity which the ordinary tombs of white marble do not possess. Most of you have seen that splendid frieze at the Louvre brought by Monsieur Dieulafoy from the ruins of Darius's palace at Susa. Some of the archers in this frieze have green beards, and when I returned to England after seeing this frieze in Paris, before it found a permanent resting-place in the Louvre, an English gentleman in the train got into conversation with me, and we talked about these works of art found amongst the ruins at Susa, and I mentioned that the beards of the archers were green, and was instancing it as an experiment made by the potters either from choice or necessity to show the dark hair, as a black glaze was perhaps not handy; but this gentleman said he had just come from the Blue Nile, and that all the people there stained their beards green. I think it has been conjectured that some of the engraved signets found in Assyria and Persia were engraved with the points of the flint arrow-heads.

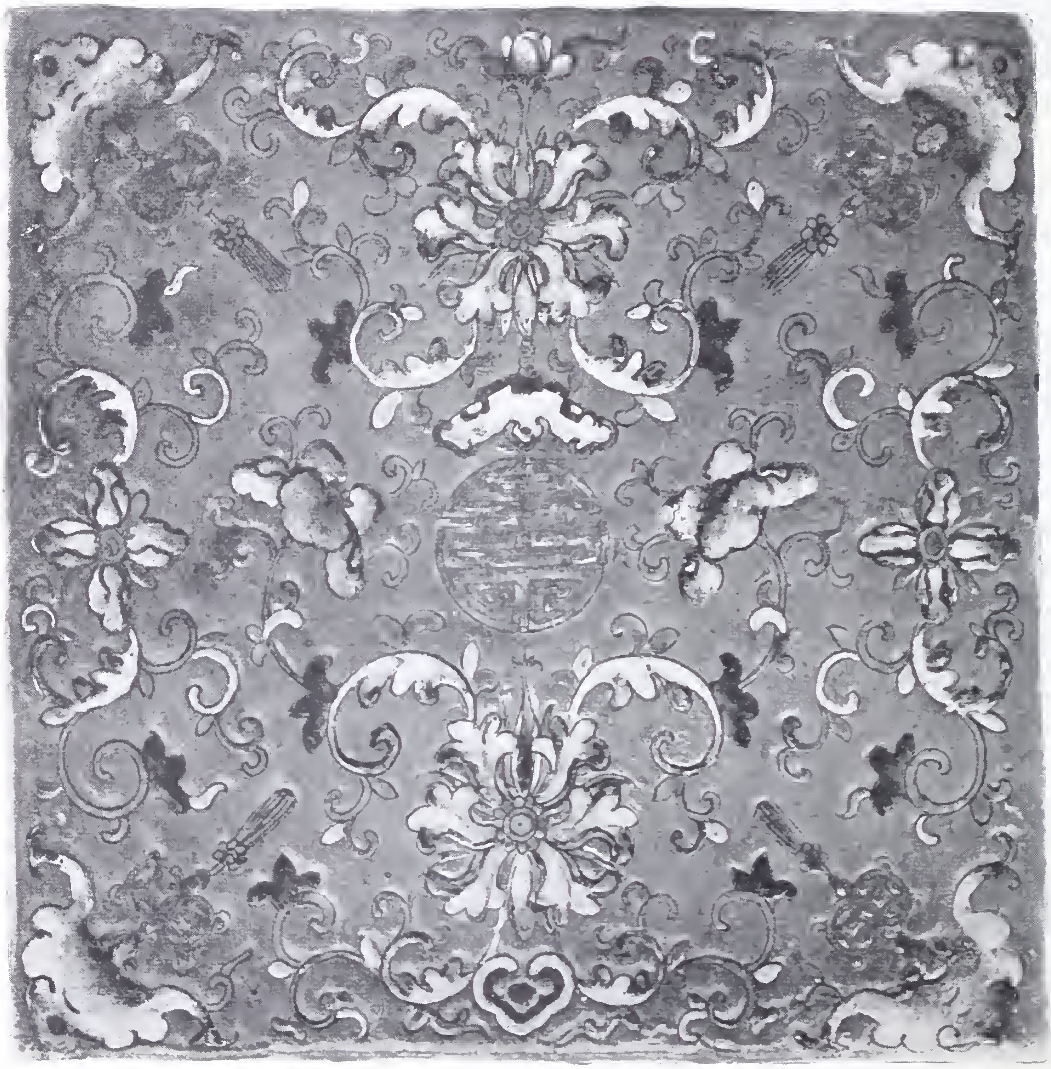


FIG. 1.—INDIAN TILE: PINK, WHITE, GREEN, GOLD, ON AZURE GROUND. 6″ × 6″.

I do not know why it should be more unbecoming to have a blank place outside a building made glorious with colour than in the inside; some of the churches and cathedrals where the windows occupy nearly the whole wall space are filled with the most gloriously coloured glass that can be conceived. I do not see why a fine panel of enamelled terra-cotta or glass mosaic should not delight us like a glorious stained-glass window, except that the liquid colours seen through the glass are more heavenly. I cannot account for the impression any more than I can for that crimson leaf that I saw on the outskirts of a sombre wood near Rome in 1854, which flamed like a ruby, and fixed itself on my memory.

Some of the monks who had a divine genius for colour devoted themselves, as an act of worship, during the twelfth century, to perfecting the harmonies of colour in the glass of the churches, and these harmonies have never been surpassed, nor, I think, equalled. To take some of those that we have at home, I may mention the windows in the aisles of the choir at Canterbury. When you see the grand windows at Chartres lit up by the sun while an anthem is being sung, and some curling clouds of incense are arrested by the vault, you think that nothing more heavenly is possible, and that the highest ambition of man must be to become a glazier.

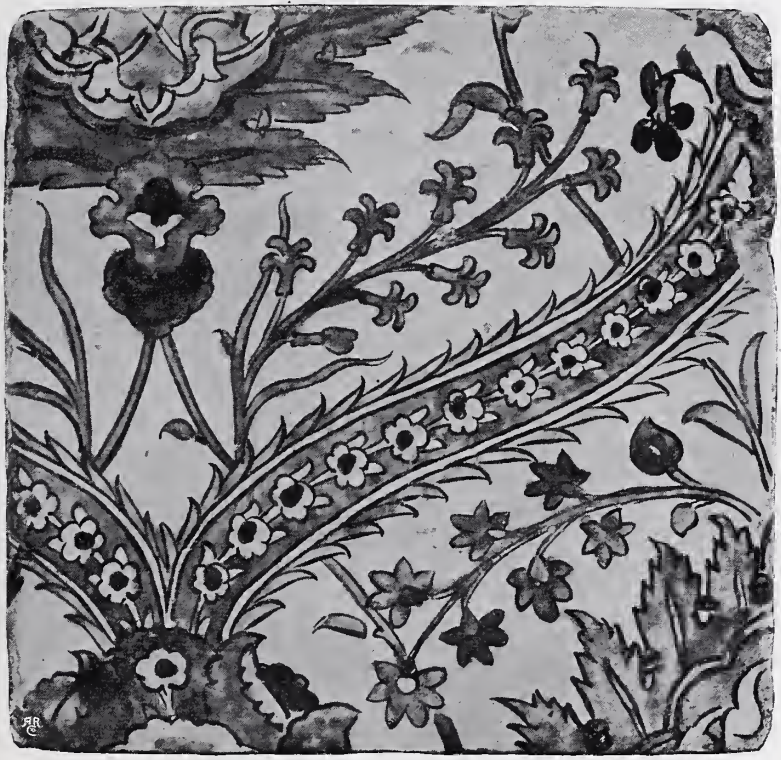


FIG. 2.—DAMASCUS TILE: BLACK, DARK AND LIGHT BLUE, PURPLE, WHITE, AND GREEN, ON WHITE GROUND. 9″ × 9″.

There are many very fine specimens of coloured glass in the mosques at Cairo, and although the glass is very thin, being set in a projecting frame of Arabic mortar, the uniform colour is greatly varied by the shadow from the framework, perhaps only one small piece getting perfectly lit by the sun, and that tiny piece then glows like a jewel.

Perhaps second only to the windows of Chartres—if second to anything—are the lovely windows in the cathedral at Florence, said to have been made by an Italian gentleman who had studied glass painting in Flanders. The windows are said to have been designed by Ghiberti.

Both in glass and in rude native pottery many of the artistic effects we most admire are what may be called accidental, and we sometimes are apt to deplore the more perfect methods that have been introduced in modern times; but that, in my opinion, is a most ridiculous desire, and only shows our stupidity and incompetence, for with a little thought and trouble we could introduce a pattern which would have the same effect in breaking the uniformity of tone.

It has been stated by those who have lived in Persia that the potters there would make the main colour with which a piece is enamelled perfectly uniform, like a commonplace English potter; but I can hardly believe that this is true, for we see in their woven stuffs, where nothing depends on the action of fire, that it is quite common, if not universal, for the Persian weavers to vary the tones of any colour that forms the main centre of a bordered carpet. There was a beautiful green Persian carpet that I once saw laid down; the weaver had put in certain parts several stripes of almost pure yellow; and in the case of yellow carpets I have seen the same narrow stripes, in black. Personally, I do not particularly admire this black accent in the yellow carpet, although we must all feel with the weaver that nothing is so abhorrent to an eye cultivated to appreciate colour as absolute monotony; in this carpet that I spoke of, with the whole centre one mass of green, the introduction of a little yellow made it like one of those moss-grown banks in a wood where an excess of moisture makes one part streaked or dappled with yellow. I was amused by hearing a fashionable lady criticise this green carpet: she was asking the lady of the house when she was going to have her new carpets, and the latter replied, "We have just got them." The visitor remarked that it was curious that the new carpet had faded; she evidently had no appreciation of colour.

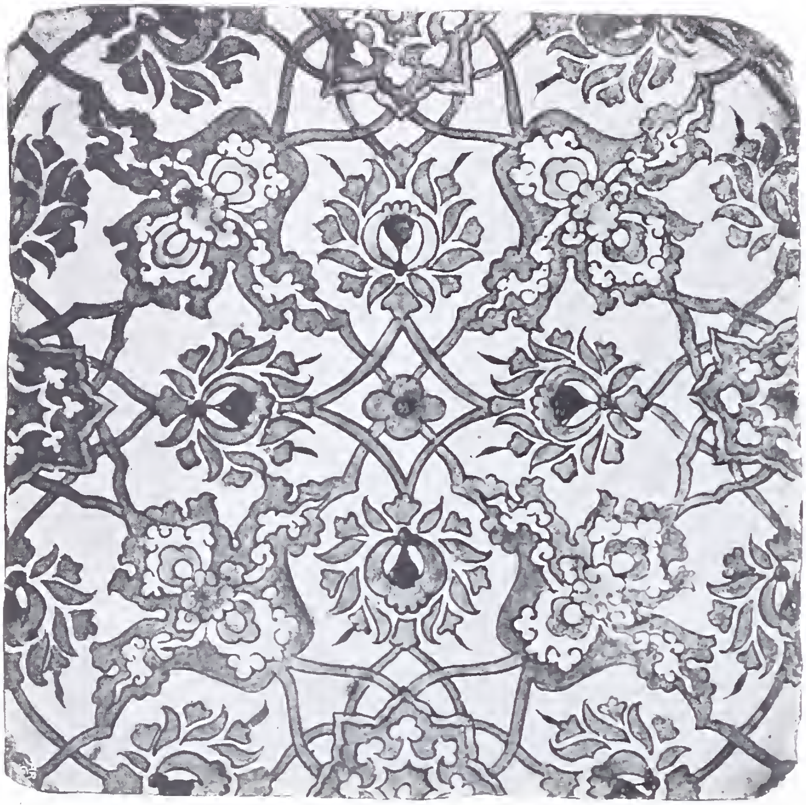


FIG. 3.—ARABIC TILE: BLACK, PURPLE, AND TWO SHADES OF BLUE ON A WHITE GROUND. 10½″×10½″.

Those of you who are colourists will have observed how Nature abhors uniformity, and that if a whitewashed wall is left sufficiently long Nature will form this monotonous patch of white into a most beautiful variegated one with suggestions of almost all the colours. Of course to get perfect loveliness and harmony with the enamelled colours of pottery we must have the same gifts of perfect unselfishness and devotion that distinguished the mediæval glaziers; in the twelfth century they were mostly monks with a passion for colour, and they devoted themselves to making harmonies that have never been surpassed, even if ever equalled. The loveliness of stained glass is not wholly within man's power. The sun produces the different entrancing effects, which in the finest specimens suggest melting jewels being mixed together that produce such exquisite beauty as we perhaps have never seen in nature, but have only dreamed of at ecstatic moments.

The sun came dazzling through the leaves,
And flamed upon the brazen greaves
Of bold Sir Lancelot.

I am really only advocating the perfecting of colour in opaque substances, which never, as far as I am concerned, has kindled the raptures that are produced by a transparent medium lit by the sun. The Saracens, when they had attained skill, produced the most enchanting effects with dead colour and gold by graduating the surfaces, so that the light struck on them at different angles. That piece of the Alhambra that Owen Jones had done at the Crystal Palace shows us what marvellous effects the Saracens achieved by using a few colours and some gold on surfaces of slightly different altitudes and apparently slightly different angles. The least shift in the beholder's position will bring out an entirely new pattern of different colours from the one before it, and in some cases both can be made to melt into each other.

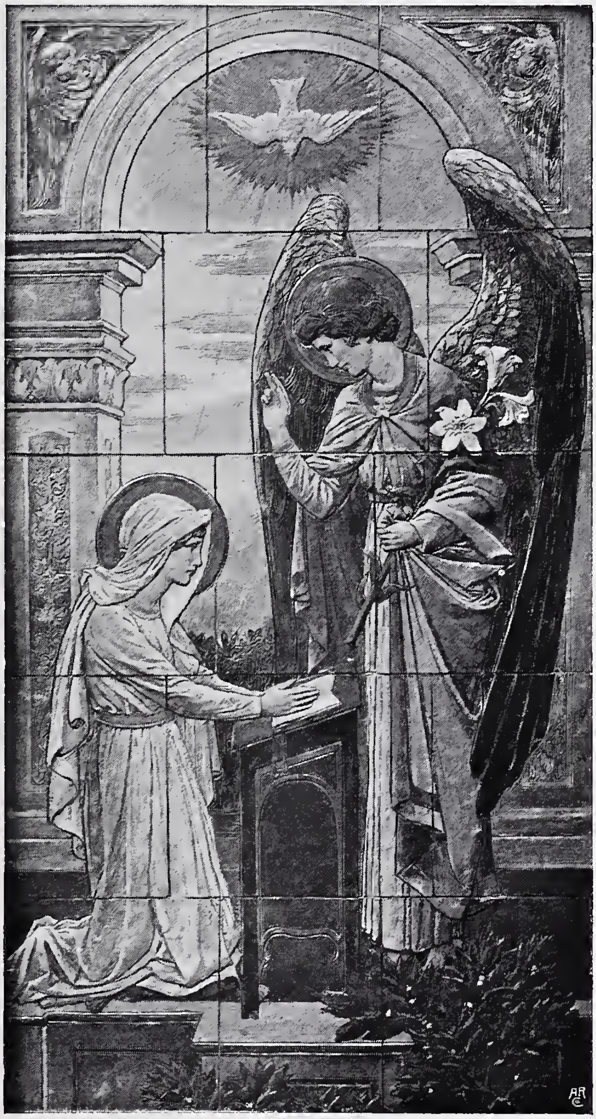


FIG. 4.—PANEL IN "VITREOUS FRESCO," MODELLED IN LOW RELIEF. (DOULTON & CO.)

You all probably know that the Greeks painted their statues, as did the mediævals of the thirteenth century. I do not suppose that the Greeks painted the white dresses over with distemper, but, if necessary, merely put a painted or gilt border on the robes; and I am of opinion that all the flesh that was shown was merely glazed over with some kind of varnish, so that the white marble showing through looked like flesh. In those tombs that were discovered by Hamdhi Bey at Sidon and are now in the Museum at Constantinople, the statues on the main body of the tomb, which are about half life size, are all left in the pure white marble; but some leaf ornament on the sloping sides of the roof of the sarcophagus has the ground stained a darkish purple, and in the pediments at each end, where the figures are small, they are all coloured, the mantles being generally of scarlet or purple, the bronze armour gilt, and the hair coloured, like some of the coloured Tanagra figures. I cannot now recollect whether the lips were coloured red, but we know from Plato that the eyes were coloured after nature. In Book IV. of the *Republic*, Plato says :—" If we were painting a statue, and someone were to come and blame us for not putting the most beautiful colours on the most beautiful parts of the body—for the eyes, he would say, ought to be purple, but they are black—in that case we might fairly answer, 'Sir, do not imagine that we ought to beautify the eyes to such a degree that they are no longer eyes, but see whether, by giving this and the other features their due, we make the whole beautiful' " (Jowett's translation, 1875).

In one of Giovanni Pisano's white marble statues of the Virgin the hair was gilt, the face was painted, and there was a little piece of lining of one of the robes painted, and I think a pattern on the border of the robe was gilt. The supposition that the Greeks, who were the greatest artists the world has yet seen, would have daubed with distemper the splendid Parian or Pentelic marble is absurd.

FIG. 5.—WALL TILING IN CARRARA STONEWARE. (DOULTON & CO.)

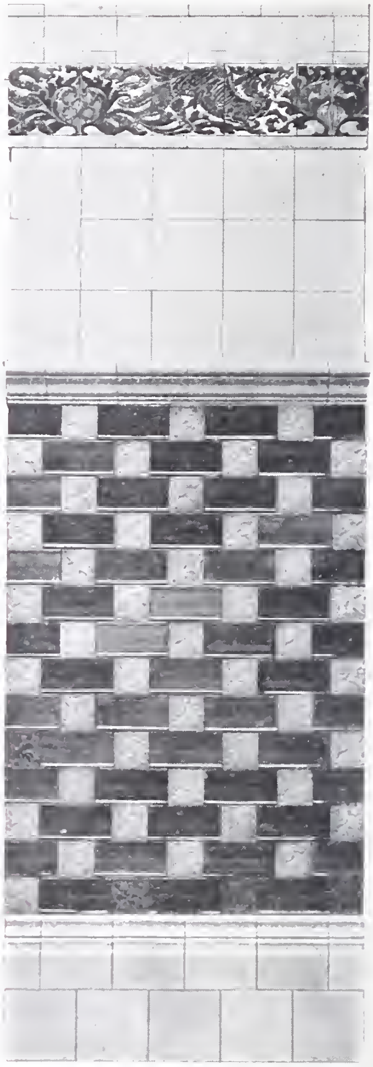


FIG. 6.—WALL TILING IN SALT-GLAZED AND CARRARA STONEWARE. (DOULTON & CO.)

Perhaps it is no use in the present day recommending anything that would merely confer beauty on a town, but I think it might be urged on the ground of health and cheapness that if the outsides of buildings were covered with enamelled terracotta it would be much better for the inhabitants' health than the present grime, and that the expense of a constant repainting of fronts would be saved. The state of the houses is bad enough in London, but when you come to the manufacturing towns of the North, such as Leeds or Manchester, the making of the fronts clean, bright, and beautiful, instead of black, would certainly have a beneficial effect on the health of the inhabitants. Of course health is an important consideration, but we hope that the country has not sunk so low as to be absolutely indifferent to the beauty or ugliness of anything.

Why do we commit to memory passages of poetry that delight us? It is, I think, for two reasons—one, to have "infinite riches in a little space," and the other to have something delightful that we can always enjoy. As we read that "one star differeth from another star in glory," so we may have in our coloured buildings and houses some more august, some more beautiful, some more impressive, and some gayer than others.

You cannot expect to take any high position in the world if you are not willing to endure privation to attain it. The first attempts might not be properly remunerated, and even the most successful ones might not be appreciated at anything like their worth, but you must be prepared to make great sacrifices to be allowed to confer benefits on mankind.

I think I told you that when I first went to Venice some of the fronts of the houses on the

Grand Canal and in some of the Piazzas showed the remains of figure painting on the plaster, and the same sort of figure painting then existed on the houses at Brescia. Last year I showed you some photographs of Roman palaces that had been painted with subjects by Baldassare Peruzzi, and where these are made as you would make a sculptured frieze or panel I think nothing can be more appropriate; but I do not think it is so where the fronts look as if they had been large pictures with holes cut through them for windows; still, you must recollect that painters then abounded, and that it was very difficult to get a living by painting, so that however much the artist might have objected to this method of decoration he was forced to do it to get his bread. Many of Raffael's frescoes in the Vatican do not strike me as appropriate decoration. Walls have a certain structural purpose to fulfil, and if the subjects are properly framed as pictures they may look appropriate as well as beautiful. This may have been suggested to the painters by the common practice of hanging the walls with tapestry which contained landscapes, battles, and the like, though, as tapestry is a different material from the walls, it looks more reasonable; I think if our artists were employed on such work now, they would be careful not to destroy the appearance of solidity in the wall. The Byzantines, when they put figures on to their domes and vaults, mostly made them sufficiently conventional to show that they were intended as mere decorations of the walls, vaults, or domes.

I mentioned in my former lecture on this subject the cases that I had noticed in London, and I have noticed comparatively lately a very apt use of coloured decoration in enamelled earthenware, sometimes intermixed with pictures in glass mosaic.

There is a celebrated frieze of Luca della Robbia ware, a copy of which is in South Kensington Museum, but it is not very successful as a decoration.

It is most probable that the Panathenaic frieze of the Parthenon was partially coloured, and no doubt the Greeks had been careful not to make the colour too realistic.

I think you will all agree with me that in this climate, where we have so much dark and damp weather, it is not pleasant to walk through streets of dingy brick in misty weather or in drizzling rain, when every wall has black tears running down it; while if the houses were faced with a material which could be washed with a hose, we should avail ourselves of this method of keeping the outside of our houses clean; and if in addition they were beautifully coloured, it would raise our spirits.

A certain number of the Saracen houses are adorned outside with enamelled tiles, but as a rule ornamental decorations were reserved for the inside, the people always being afraid of attracting the Evil Eye by any show of wealth, beauty, or magnificence. You probably remember that Al-ed-Deen was kept in a vault till he was fourteen to avert the Evil Eye. In the Gate of Justice at Granada coloured tiles have been put in certain places.

I have never been in Persia, where more external display of colour is used than in other Saracen countries, and where, too, the exclusion of figure subjects was not so much insisted on, for the Persians are Shias, or heretical Muslems.

In the late Lord Leighton's Arab Hall there are many tiles painted with birds, beasts, fishes, and men, probably of Cufic work, which, I suppose, once belonged to some heretical Mussulman, and afterwards came into the possession of a devout one, who, having consulted the doctors of the law, was told that he was only breaking the commandment by having representations of living things, and if he cut all their throats he would fulfil his religious obligations; and, if closely examined, these animals and human beings can be seen to have a cut across the throat; this does not apply to replicas executed by Mr. De Morgan.

The only large external thing which I have seen coloured in Italy is the spire of a church at Lugo. This was built of bricks with a rounded end, the rounded end forming the external part of the spire; these bricks were all enamelled, and as far as I recollect formed into ribbons and bands. We must, however, remember that nearly all Chinese and Japanese architecture is decorated with colour, and some of it is described by travellers as magnificent; we know that almost every imported plate, cup, saucer, or vase is painted with some of the incidents of life; and this scheme of decoration, as far as the minor articles of use are concerned, was taken up by almost all European nations when porcelain was discovered about 1700 by Böttcher, as painting had been earlier employed by the Italians in their majolica plates and dishes of earthenware. I think the early designs were the best, as we see in some of the lustre-ware by Maestro Giorgio. The early painters of these majolica plates and dishes were very well instructed in the art of ornamentation, and those plates painted by Maestro Giorgio and his contemporaries show a most excellent judgment in the manner in which the rim, the bevel, and the bottom were ornamented. But when the potters enlisted the figure painters at a low rate, these artists were very often ignorant of the laws of ornamentation, and painted figure subjects or country scenes over the whole plate, as if it were a flat surface, which causes curious distortion in the figures, and is always inappropriate.

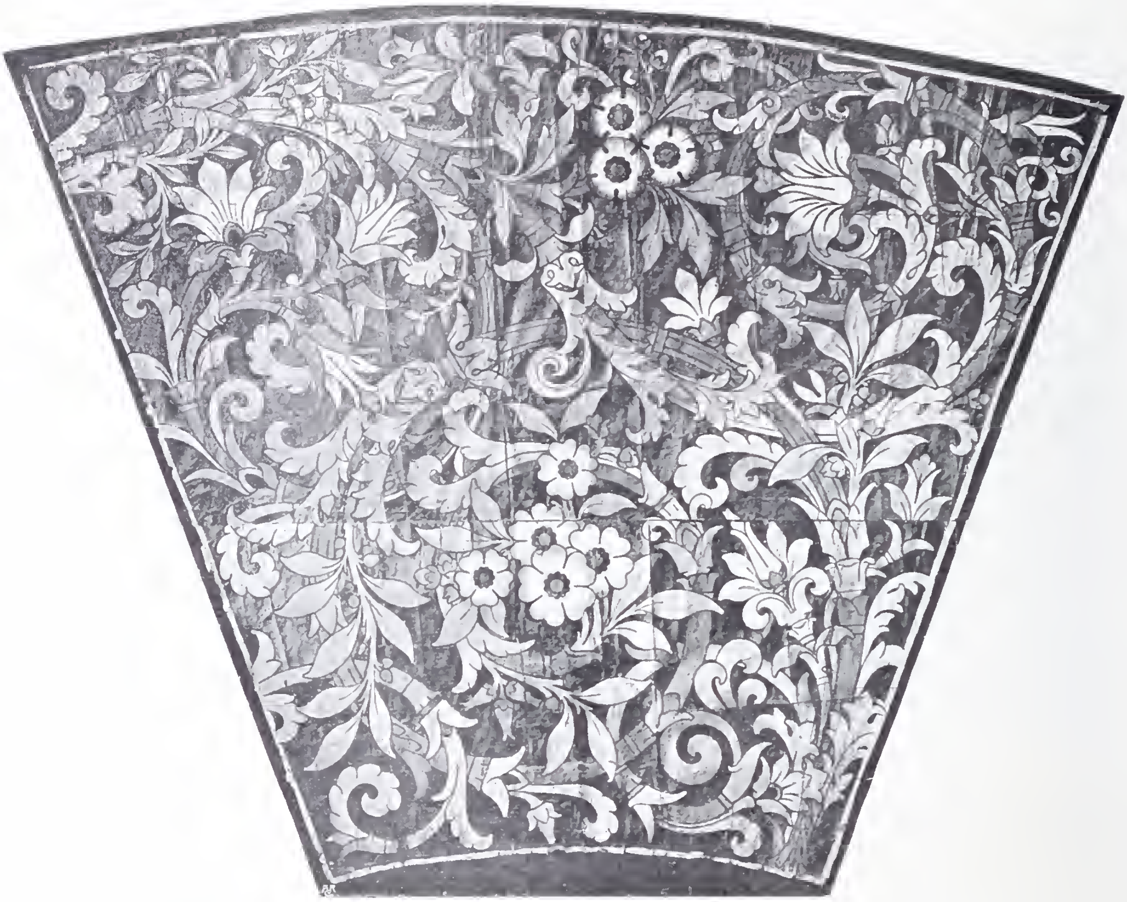


FIG. 7.—MOSAIC PANEL IN CEILING OF GREAT VESTIBULE, MAGASINS DU PRINTEMPS, PARIS. M. PAUL SÉDILLE, ARCHITECT.

I did mention the possibility of using the various coloured porphyries, which I think may be found in Norway or Sweden, of every variety of colour, from white to black; but as the labour required to work porphyry is very great indeed, even if the stone were got for nothing, we could hardly expect such a material to be used; but it is the only stone except granite that will stand the abominable air of London. Marble is a lovely material, but it cannot be used outside a building with any success in London on account of its so rapidly perishing by the vicissitudes of the climate and the foulness of the air. I do not know that it is much more perishable in London than it is in Venice; but there at least disintegrated marble is not covered with dust and soot. Charles Garnier defends the use of marble outside buildings in Paris, and says "truly the marble decays, but it gives a certain air of distinction to the building, even as a gentleman in rags could not be confounded with a peasant or common fellow even in his best clothes." But I do not think this simile quite holds good in London, for the soot and grime soon take away all traces of beauty from the marble, so I think we must reserve marble for inside work.

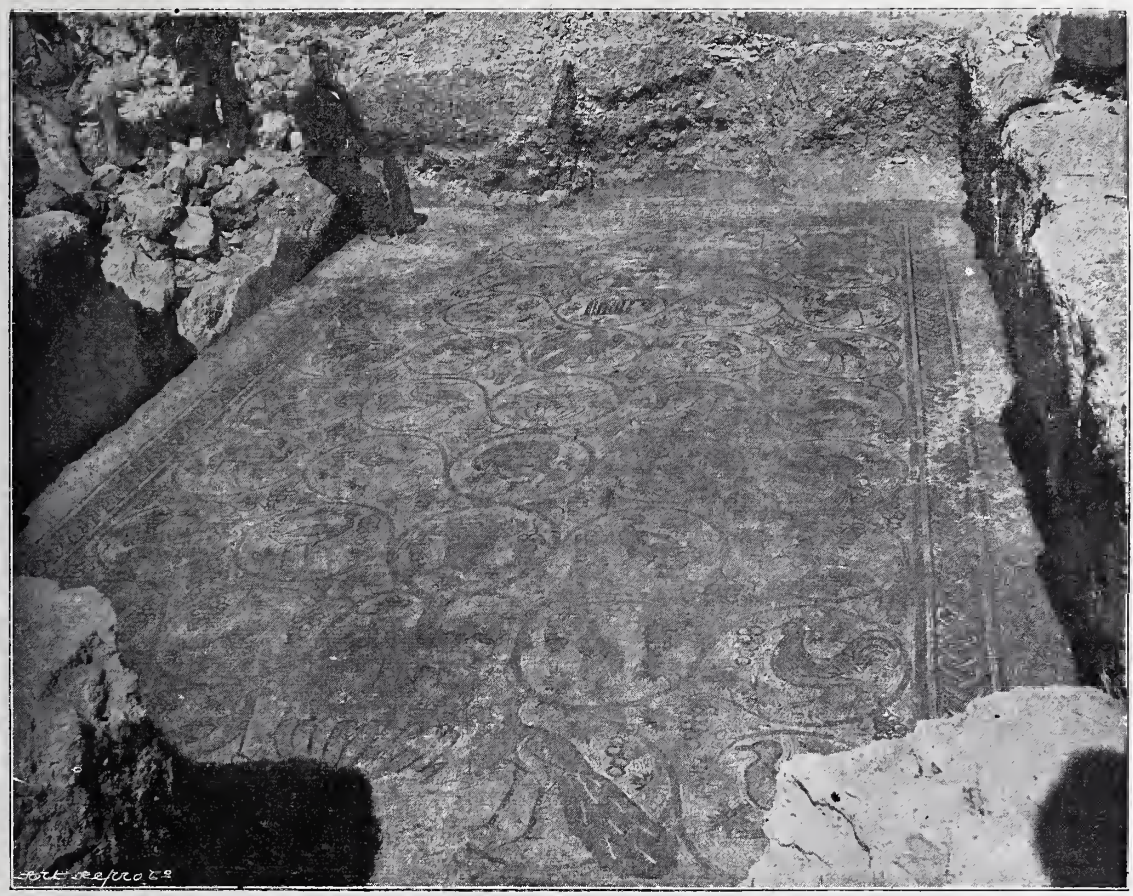


FIG. 8.—MOSAIC IN ARMENIAN MORTUARY CHAPEL, JERUSALEM.

"The mosaic is a most elaborate piece of work, the stone tesseræ being of almost every colour. Within a border of the guilloche pattern we observe a vase, from which springs a vine ramifying into branches, on which hang grape-clusters; among the branches are numerous birds, peacocks, ducks, storks, pigeons, fowls, an eagle, a partridge, a parrot in a cage, etc."—*Dr. Bliss's report*; see "Some Early Christian Churches in Palestine," by Archibald C. Dickie, JOURNAL R.I.B.A., 11th March 1899.

In urging you to study the harmonies of colour I am actuated by two motives: one is the perpetuation of the beauties of nature in the outside of our buildings, and the other the desire that my fellow-countrymen should not sink to that degraded position in which they have lost all sense of delight in its surpassing loveliness. It seems to me that Nature has surrounded us with all these varied beauties of colour for our solace, refreshment, and purification, and that it is most important that the architects, painters, and sculptors should do their utmost to prevent the nation from sinking to that depth of insensibility that no beauty can touch it. I have always thought that it was very shameful that the great wise men, the lawgivers, the philosophers, the great poets, the great painters, sculptors, and architects, have been in general so badly rewarded; but seeing that this base ingratitude appears ingrained in every nation, those of you who are great must sacrifice yourselves to prevent your fellow-men from sinking to a lower level than they have arrived at at present, remembering that if Buddha and Diogenes were beggars, it was in the hopes that they might raise their fellow-creatures to a higher level.

One of the things about decoration in colour that is the most distressing to the designer is that if the colour is merely paint, and is not a regular figure subject or landscape on canvas or a panel, when the decorated part gets dirty or stained, more especially if the then occupier is not the person for whom the original decoration was done, the newcomer may find some coats of white paint the cheapest substitute for the former decorative painting, and in using it he utterly destroys the decoration.

A client for whom I was decorating a house begged me to see his old house, where one of his rooms had been decorated by the late Godfrey Sykes. I called at the house with his note of introduction, but the occupier was abroad, and as I had not much time to spare I begged the servant to let me see the room, which he was very loth to do; but at last he yielded to my importunity, but said grumblingly, as he showed me in, he could not see what anybody wanted to look at it for, and I found that the room had been painted white.

The use of mosaic prevents this utter destruction of what may be a beautiful thing, and I have found in sumptuous drawing-rooms glass mosaic with a gold ground by no means too brilliant for its surroundings. There was one drawing-room I did, to which unfortunately I cannot give you the entry, as it was sold; but I can show you some of the designs for the mosaic by Mr. Walter Crane, and you can see other decorations by the same designer in the late Lord Leighton's Arab Hall. There it is contrasted with beautiful marbles, Arabic tiles, and stained glass.

In some few cases this glass mosaic is too brilliant and too sparkling to harmonise with the rest of the work. The late George Edmund Street, at the Guards' Chapel, Birdcage Walk, used figure panels in marble mosaic, which harmonised very well with the rest of the chapel, as it is softer in its contrasts, and has none of the sparkle of glass mosaic.

The most abominable misuse of mosaic, except for brooches or little articles of personal adornment, is the attempt to imitate pictures with minute tesseræ, commonly called Roman mosaic; two of Raffael's pictures, supposed to be masterpieces, are done in this way at St. Peter's. Doubtless they show the composition of Raffael; but, although Raffael was no colourist, he would never have painted a picture that set your teeth on edge as these do.

I mentioned before some very effective glass mosaic put on a pink-fronted terra-cotta shop at South Kensington, a little before you come to Mr. Street's church.

I think for floors the most magnificent sort of mosaic is the Opus Alexandrinum, which may be seen in several of the churches at Rome and at Constantinople. If I recollect rightly, there are the remains of subjects done in this Roman mosaic on the floors of Caracalla's Baths. In one of the great Exedras in the gymnasium of these baths the floor is in mosaic divided into compartments, each showing members of the fancy who, I suppose, had distinguished themselves in the games there, and there was a strong resemblance in their faces to distinguished members of the prize ring over here.

I beg to thank Messrs. Doulton and Messrs. Simpson for their loans of coloured and enamelled terra-cotta.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS 1834
INCORP. 1837 1887

9, Conduit Street, London, W., *26th Sept.* 1903.

CHRONICLE.

Sessional Papers 1903-04.

Arrangements have been made for the following Papers to be read at the Ordinary Meetings next Session :—

Nov. 16.—" Le Trésor de Cnide et les Monuments de l'Art Ionien à Delphes," by Monsieur J. T. Homolle [*Hon. Corr.M.*].

Dec. 14.—" The Royal Victoria Hospital, Belfast: Its Inception, Design, and Construction," by Messrs. Wm. Henman [*F.*] and Henry Lea, C.E.

Jan. 18, 1904.—" Architecture in Lead," by Mr. J. Starkie Gardner.

Feb. 15.—" The Bacteriological Disposal of Sewage from Isolated Buildings," by Professor Frank Clowes, D.Sc.

Mar. 14.—" Plaster Decoration," by Mr. J. D. Crace [*H.A.*]

Mar. 28.—" Electric Generating Stations," by Mr. C. Stanley Peach [*F.*]

Apr. 18.—" The Statues of Wells Front, with some Contemporary Foreign Examples of Sculpture," by Mr. E. S. Prior.

May 16.—" The Planning of Collegiate Buildings," by the Rev. J. B. Lock, M.A., Bursar of Gonville and Caius Coll. Camb.

The President.

Mr. Aston Webb, R.A., has been elected *Membre Correspondant* of the Société Centrale des Architectes Français.

Memorial to Mr. Penrose in St. Paul's.

The tablet to the memory of Mr. F. C. Penrose is now in course of preparation, and it will, it is hoped, be shortly fixed in the crypt of St. Paul's Cathedral. The subscription list is still open, and members who desire to contribute towards the expenses of the tablet are requested to send their donations to the Secretary of the Institute by an early date.

School of Art Wood-carving.

The School of Art Wood-carving, South Kensington, which now occupies rooms on the top floor of the new building of the Royal School of Art Needlework in Exhibition Road, has been re-opened after the usual summer vacation. The Committee of the school wish it to be known that some of the free studentships maintained by means of funds granted to the school by the Technical Education Board of the London County Council are vacant. The day classes of the school are held from 10 to 1 and 2 to 5 on five days of the week, and from 10 to 1 on Saturdays. The evening class meets on three evenings a week and on Saturday afternoons. Forms of application for the free studentships and any further particulars relating to the school may be obtained from the manager.

Façade Competitions.

Professor Aitchison, R.A., who has just returned from Paris, suggests that the following article by Emile Berr, which appeared under the heading " Concours de Façades " in *Le Figaro* of the 20th inst., will interest members and might be printed in the Journal. M. Bouvard, who has brought about these competitions in Paris, holds the office of Directeur des Services d'Architecture de la Ville de Paris, and is a Corresponding Member of the Institute :—

C'est à M. Bouvard que vint, il y a deux ou trois ans, l'idée de ce concours. Et l'idée est charmante. En bon Parisien et en spirituel artiste qu'il est, M. Bouvard se désolait de constater combien certaines capitales étrangères se montrent supérieures à Paris dans l'art d'orner leurs rues,—j'entends d'y bâtir des maisons où apparaisse un souci de beauté. Et il est vrai que nulle part, depuis cent ans, l'on n'a montré moins que chez nous ce souci-là. Il semblait que seuls les monuments publics ou l'hôtel particulier eussent quelque droit à l'élégance, et qu'il y eût une sorte de ridicule à prétendre parer d'un peu de grâce la façade d'une de ces bâtisses méprisables qu'on appelle des maisons " de rapport." Haussmann lui-même eut le dédain profond de cet art-là ; et pas un instant l'idée ne vint à ce grand homme qu'une ville comme Paris pût souhaiter, pour être belle, autre chose que des rues larges, bordées de casernes alignées proprement. Les boulevards de Sébastopol et de Strasbourg donnent une exacte idée du genre de beauté édilitaire qui suffisait, vers 1860, à contenter les hommes chargés " d'embellir " Paris. L'effort de leur esthétique s'arrêtait là

Leurs successeurs ont pensé qu'on pouvait aller plus loin, et, depuis une vingtaine d'années, des architectes se sont avisés—ayant à construire n'importe où des maisons destinées à n'importe qui—de vouloir que, tout de même, ces maisons ne fussent point quelconques tout à fait, et qu'un peu d'élégance les décorât ... Et M. Bouvard a fait mieux encore ; il a encouragé cet effort ; il a obtenu de nos édiles que, chaque année, les architectes des plus jolies façades neuves de Paris fussent récompensés, et que la faveur de certains dégrèvements fût accordée aux propriétaires de ces maisons.

Le concours de 1903 sera jugé dans quelques semaines, et dès ces jours-ci, le jury, que préside M. Bouvard, commencera ses promenades à travers Paris. Il aura de la besogne, le jury de cette année ; la liste des façades " con-

currentes," que j'ai sous les yeux, ne comprend pas moins de *cent cinq* adresses. Cela fait cent cinq maisons neuves auxquelles le jury devra rendre successivement visite, et qui s'éparpillent un peu partout.

Certains arrondissements sont cependant plus favorisés que d'autres, et c'est surtout à l'ouest de Paris, à Batignolles et à Passy que "le bâtiment va"; sur cent cinq maisons neuves dont les architectes sollicitent l'approbation du jury municipal, il y en a trente-quatre (le tiers du lot) groupées dans ces deux arrondissements.

Mais ce qui est très intéressant, c'est de voir se répandre ce souci de construire "joliment" en des parties de la ville où, même en ces dernières années, les architectes ne se préoccupaient guère d'intéresser les yeux de l'habitant. On ne dédaigne plus d'édifier de jolies maisons dans Montmartre; onze façades neuves y attendent le jury. Dans le cinquième arrondissement, aux alentours de cette rue Galande, qui fut un des repaires célèbres de Paris, je compte six concurrents; mieux encore: dans les populeux arrondissements du Sud, de Bercy à Plaisance et Vaugirard, M. Bouvard et ses collègues rencontreront sur trente façades nouvelles un effort d'art. Et c'est ainsi que se démocratisent, petit à petit, toutes les formes de la beauté.

Le seul inconvénient de cette émulation nouvelle est d'exciter à des audaces fâcheuses tels artistes, chez qui l'excentricité tient lieu de talent, et qui ont doté certaines rues de Paris d'œuvres prodigieuses. En vérité, s'il est juste que la beauté soit récompensée, il serait juste aussi que certains attentats publics à la beauté fussent punis. Je signale ce genre d'abus à M. Bouvard. Qu'il aille, un jour, se promener du côté de la rue d'Abbeville.... Il pensera qu'il y a de certaines fantaisies architecturales qu'un préfet de police ne devrait point tolérer; qu'il devrait exister une limite légale au droit de manquer de goût.

Connaissez-vous aussi le dernier immeuble "modern style" de l'avenue Rapp? Celui-là est célèbre dans le quartier; et, ce qui est plus grave, c'est que le jury des façades l'a, paraît-il, récompensé l'année dernière.

C'est un fâcheux précédent et une faute qu'il ne faudrait point recommencer trop souvent; ou nous en arriverions vite à regretter Haussmann et le boulevard de Sébastopol.... Ce qui serait déplorable.

The Explorations at Knossos

Dr. Evans's communication to the British Association on his latest discoveries at Knossos forms an interesting supplement to the Papers read at the Institute last December by the distinguished explorer and his assistant Mr. Theodore Fyfe.* Dr. Evans says:—

It had seemed to the excavator possible that this year's campaign in the prehistoric palace at Knossos might have definitely completed the work. But the excavations took a wholly unlooked-for development, productive of results of first-rate importance both on the architectural and general archæological side, and calling still for supplementary researches of considerable and indeed, at present, incalculable extent.

The search for the tombs, which was principally carried out in the region north of the palace, only resulted in the discovery of a necropolis of secondary interest in a much destroyed condition. At the same time remains of houses were brought to light, going back to the earliest Minôan period, and proving the continuous extension of the prehistoric city for a distance of over a quarter of a mile north-east of the palace.

At its north-western angle the palace area itself has gained a monumental accession. The building proved to extend beyond the paved court which lies on this side, and excavation here brought to light what can only be regarded as the royal theatre. This consists of two tiers of limestone steps, eighteen in number and 30 feet in width, on the east side, varying from six to three, with an extension of 50 feet on the south, while between the two is a raised square platform. The steps or low seats and platform overlook a square area where the shows must have taken place. Owing to the made character of the ground to the north-east the limestone slabs on that side had either disappeared or were brought out in a much disintegrated condition, and it was found necessary for the conservation of the rest of the monument to undertake considerable restoration. This was, however, facilitated by the fact that the lower courses of the outer supporting wall were throughout preserved. The theatre would have accommodated about five hundred spectators. A somewhat analogous feature was discovered by the Italian mission, bordering the west court of the palace at Phæstos, but the arrangement at Knossos is much more complete, and gives us the first real idea of the theatre in prehistoric Greece. The pugilistic shows represented on certain small reliefs at Knossos and Hagia Triada and the traditions of the "dancing-ground" of Ariadne, executed by Dædalos for Minos, may throw a light on the character of the performances in this theatral area.

Between this building and the west court of the palace an area was explored containing a very complex mass of constructions representing at different levels every age of Minôan culture, and apparently belonging to a sanctuary connected with the Cretan cult of the Double Axe and its associated divinities. Painted pottery and other objects were here found, with designs referring to this cult. Among other discoveries were highly decorative polychrome vases belonging to the Middle Minôan period, more or less contemporary with the twelfth dynasty of Egypt. Of later palace date was an extremely important deposit consisting of a bronze ewer and basins, with exquisitely chased ornamentation in the shape of lilies and various kinds of foliage.

On the north-east of the palace, built into the side of the hill, was uncovered a remarkably well-built house, constructed largely of fine gypsum blocks, which appears to have been a kind of royal villa. Here, as in the domestic quarter of the palace, the upper storey is also well preserved, and there are two stone staircases, one with a double head. On a landing here was found a magnificent painted jar containing reliefs of papyrus plants in a new technique. The principal chamber was a columnar hall with a tribuna at one end, backed by a square apse containing the remains of a gypsum throne, the whole presenting an extraordinary anticipation of the later basilica.

Within the previously uncovered palace area supplementary explorations of lower levels have been carried out on an extensive scale. A whole series of deep-walled chambers, perhaps representing the dungeons of an earlier palace, have been opened out. Excavations below the floor-level of the Olive Press area have brought to light the floor-levels of more ancient chambers containing exquisite painted pottery belonging to the Middle Minôan period and sealings throwing an interesting new light on its glyptic art and the early "pictographic" type of script. Beneath the pavement of the Long Gallery of the magazines a continuous line of deep stone cists (kaselles) was discovered, and from the remains of chests inlaid with glazed ware and crystal mosaic, accompanied by quantities of gold foil, it is clear that these repositories had once contained

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* "A Bird's Eye View of the Minôan Palace of Knossos, Crete," by Dr. Arthur Evans; "The Painted Plaster Decoration at Knossos, with special reference to the Architectural Schemes," by Theodore Fyfe—JOURNAL for 20th December 1902.

treasure. Near the east pillar room a small pit was found beneath the floor-level containing vases and other objects belonging to the earliest Minôan period that immediately succeeds to neolithic, and affording the first collective view of a representative type series of that period. The character of the glazed beads found in this deposit seems to indicate relations with early dynastic Egypt. The exploration of the neolithic stratum which, to a depth of 25 feet, underlies those of the " Minôan " buildings was continued, several new shafts being dug within the palace area. The successive phases of the local neolithic culture are thus becoming more clearly defined.

The investigation of the cause of a slight depression in the pavement of a store-room immediately north-east of the east pillar room led to a discovery of extraordinary interest. Beneath the pavement and a small superficial cist belonging to the latest palace period were found two spacious repositories of massive stonework containing, in addition to a store of early vases, a quantity of relics from a shrine. These had evidently been ransacked in search for precious metals at the time of the reconstruction above, but a whole series of objects in a kind of faïence like the so-called Egyptian "porcelain," but of native fabric, had been left in the repository. The principal of these is a figure of a snake goddess, about fourteen inches high, wearing a high tiara up which a serpent coils, and holding out two others. Her girdle is formed by the twining snakes, and every feature of her flounced embroidered dress and bodice is reproduced in colour and relief. A finely modelled figure of a votary, of the same glazed material, holds out a snake, and parts of another are also preserved. The decorative fittings of the shrine include vases with floral designs, flowers and foliage in the round naturalistic imitations of nautiluses and cockles, rockwork, and other objects, all made of the same faïence. The central aniconic object of the cult, supplied in the formerly discovered shrine of the Double Axe, was here a marble cross of the orthodox Greek shape. The cross also occurs as the type of a series of seal-impressions, doubtless originally belonging to documents connected with the sanctuary found with the other relics. A number of other seal-impressions deposited with these show figures of divinities and a variety of designs, some of them of great artistic value. An inscribed tablet and clay sealings with graffite characters were also found, exhibiting a form of linear script of a different class from that of the archives found in the chambers belonging to the latest period of the palace.

In view of these important results it is obvious that further investigations beneath the later floor-levels must be carried on throughout the palace area. The search for the royal tombs has also to be continued. The region about the theatre and the north-west sanctuary still requires methodical excavation on a considerable scale, and the neolithic strata call for continued investigation. The need for further assistance from those interested in the results already obtained is still urgent.

Obituary.

William Henry Corfield, M.D., F.R.C.P., Professor of Hygiene and Public Health at University College, London, and Consulting Adviser to H.M. Office of Works, who died on the 26th ult. in his sixtieth year, had been connected with the Institute as Hon. Associate since 1883.

He was born in 1843 at Shrewsbury and was educated at the Cheltenham Grammar School and Magdalen College, Oxford, where in 1863 he gained a first-class in mathematical moderations. In the same year he was selected by Professor Daubeny to accompany him in his examination of the volcanic appearances in the Montbrison district of Auvergne. In 1867 he won the Radcliffe Travelling Fellowship, which gave him a chance of visiting the professional centres of the Continent and, amongst other places, Paris, where he studied analysis with special reference to hygienic matters under Berthelot at the Collège de France, and attended Bouchardat's lectures on hygiene. In London he studied at University College Hospital. In 1868 he took his M.B. degree and was appointed examiner for honours in natural science at the University of Oxford. In 1869 he received the further appointment of Professor of Hygiene and Public Health at University College, London. He started in 1875 at this college the first hygienic laboratory established in London.

In 1869 he was elected a member of the committee appointed by the British Association to report on the treatment and utilisation of sewage, and prepared for the Committee a Digest of Facts, which was published in 1870 and has gone through two subsequent editions.

In 1872 Dr. Corfield was elected medical officer of health of St. George's, Hanover Square, a post he held for over twenty-eight years. In the same year he was appointed lecturer on the laws of health at the Birmingham and Midland Institute, and afterwards at the Saltley Training College. In 1873 he delivered a course of lectures on Water-supply, Sewerage, and Sewage Utilisation to the Royal Engineers stationed at Chatham. In 1879 he delivered the Cantor Lectures before the Society of Arts, taking for his subject " Dwelling Houses, their Sanitary Construction and Arrangements." These lectures were translated into French by Dr. Jardet and published in Paris.

Dr. Corfield devoted himself for over 30 years exclusively to sanitary practice, advising as to the causes of outbreaks of disease connected with sanitary defects and the remedying of such defects. At the International Health Exhibition in 1884 he was director of the hygienic laboratory, and contributed a valuable lecture on Foul Air in Houses. He was also a member of the committee that superintended the construction of the "healthy and unhealthy houses" which attracted so much attention at that exhibition. In 1885 he delivered the anniversary address to the Sanitary Institute on the Water-supply of Ancient Roman Cities, with especial reference to Lugdunum (Lyons), in which he showed how the Romans employed inverted syphons made of lead for the purpose of carrying their aqueducts across deep valleys. In 1893 he delivered his Harveian Lectures before the Harveian Society of London on Disease and Defective House Sanitation. These lectures have been translated into French and published in the *Bulletin* of the Royal Society of Public Health of Belgium (1899), and also into

Hungarian under the auspices of the Royal Society of Public Health of Hungary.

His work was recognised abroad, and he was Honorary Member of most of the Continental hygienic societies. It was through his efforts that the International Congress of Hygiene, to which he acted as foreign secretary, was held in London in 1891 under the presidency of the King (then Prince of Wales.)

The foregoing notes are from a very complete biographical notice which appeared in the *Lancet* of the 12th instant.

HERBERT FORD, who died on the 1st inst. at the age of seventy, was elected a *Fellow* of the Institute in 1870. He practised in the City for upwards of forty years, and was looked upon as an expert in the designing of warehouses adapted to the Manchester and allied trades. In later years Mr. Ford was associated as partner with Mr. W. J. Burrows, and among the buildings carried out by the firm were Messrs. Pawson & Leaf's, and Messrs. J. Howell & Co., St. Paul's Churchyard; Messrs. J. Rotherham & Co.'s premises in Shoreditch; Messrs. Stapley & Smith's factory at Hackney, and alterations to their London Wall premises; large blocks of offices in Cheapside, Milk Street, Aldermanbury, Holborn, and Southampton Row; alterations to the Phœnix Assurance Company's premises in Lombard Street; the restoration of warehouses demolished by the great Cripplegate fire; and several blocks of schools.

Intimation has been received of the death of ARTHUR JOB BARLOW, *Associate*, elected 1880.

LEGAL REGISTRATION OF ARCHITECTS.

9th September 1903.

To the Editor of the JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SIR,—It was not my intention, in writing to you,[*] to enter in detail into the arguments for and against registration. Considering the quantity of ink and paper which this discussion has already consumed, a skilled controversialist (which I am not) might hesitate before demanding from you the necessary space.

My sole object was to state my own convictions—convictions which I believe to be shared by many provincial architects, and which have at least been formed after a careful study of what has been written on the question during these last fifteen years or more.

One may admit the specious nature of many of the arguments used, whilst demurring altogether to the conclusions which it is sought to draw from them, and whilst protesting especially against the way in which the support of young architects has been enlisted on behalf of registration, by the holding out of prospects whose fulfilment it would be far more likely to postpone than to advance. It is easy to paint a picture of the architect's lot as it is, and as we should like it to be, and then to assume—with the aid of a logic familiar in commercial literature—that registration is the talisman which is going to create harmony where chaos now reigns; but there will surely be not a few who, noting the fact that registration is to begin by accepting and perpetuating a state of things which itself calls urgently for reform and alteration, will hesitate before they acquiesce in any such experiment.

What is the existing state of the architectural profession, upon which we are to ask the Legislature to set the seal of registration? A tree is judged by its fruits, and how far will these bear examination?

For many years past, more than a generation, its strictly architectural aspect seems to have been growing "small by degrees and beautifully less," until one sometimes wonders whether the name of "architect" may not soon come to be regarded as borne on the principle of *lucus a non lucendo*. After half a century of sustained educational effort we may say with truth that there has never been a time when architecture was more conscientiously studied and more indifferently practised than it is at present, a fact of which both London and the provinces afford abundant evidence.

It has been frequently pointed out that an increasingly small percentage of the building work of the country is now carried out under the direction of practising architects, although the number of these latter is by no means diminishing. One asks, therefore, how is this important profession employing its energies, whilst the civil engineer, the surveyor, the decorator's man, and the specialist of every brand are relieving it of its functions one by one. No legislation can mend a state of things such as this. Instead of asking the public "to take us over as we stand," we have far more reason to put on sackcloth and ashes, and to seriously ask ourselves by what manner of men, and under what conditions, architecture has been produced in past ages, remembering that its future is in no way bound up with the profession in the particular form in which it now exists.

Architects exist for the good of architecture, not conversely, and if they fail to accomplish this, their work will pass—as it is doing—into other hands in spite of fifty Registration Acts.

The arguments based on Continental conditions will not bear pushing very far. If registration should be the result, it cannot be the cause of the recognition of architecture which one finds on the Continent.

In the countries concerned, architecture receives the same official patronage which is extended to all the Fine Arts, and in our own to none of them. Whether such official patronage be or be not a desirable thing, is a question in regard to which there may be some difference of opinion amongst those who have studied modern Continental architecture, but if registration could accomplish a change of attitude on the part of John Bull, so often sighed for by his admirers, how comes it that painters and sculptors, musicians and the rest do not demand it? One reads of suggestions and aspirations in abundance towards this public fostering of the sister arts, but I do not recollect that registration has been amongst them. Neither can any trustworthy comparison be maintained between the profession of architecture, as it now exists, and those of law and medicine—although in connection with one branch of the latter, viz. dental surgery, I have heard it stated, by men well qualified to speak, that its registration has largely helped to make unqualified dentistry "a paying business."

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[*] *Journal*, 25th July, p. 488.

However, I am quite content to base my objections on the individual facts relating to our own case, and instead of taking registration for a motto I would suggest the words of Hamlet's advice to the players, "Oh, reform it altogether!"

Yours obediently,
Charles M. Hadfield (*Associate*).

To the Editor of the Journal of the Royal Institute of British Architects.

Sir,—In my last letter to you I endeavoured to point out that the Architects' Bill was drafted upon the lines of the Medical Act, and to show broadly why this was done. The Medical Act has proved to be a success, and it is generally wise to follow a successful precedent so far as is practicable.

In particular, the machinery provided for the administration of the two measures is almost identical. In the Architects' Bill, following the precedent set in the Medical Act, the general duties of administration are vested in a General Council of paid members, appointed partly by the Privy Council, partly by the leading architectural bodies, and partly by ballot by the general body of practising architects, these last being called "direct representatives," and necessarily taking no part in the compilation of the first Register or Roll of Practitioners, as until this is compiled there would be nobody to elect them. To properly proportion the seats upon the General Council amongst the various bodies to be represented was a task of great delicacy and difficulty, but upon this point there has been little criticism. The desirability of having a General Council at all, rather than to entrust the administration to any one existing body, was felt to be great, and the reasons are obvious. So far as the Institute is concerned, it would probably be very largely represented indeed, even to the extent of having a preponderating vote, but, as an Institute, would not be responsible for the General Council's decisions.

In many respects the General Council would be like the Tribunal of Appeal under the London Building Act—a strong controlling influence doing admirable work, but courting little publicity, representing several interests, and subservient to none. Fair payment for attendances and travelling expenses is just, and could only operate beneficially.

The General Council would meet but rarely, it being divided into three branch councils for England, Scotland, and Ireland respectively, who would be possessed of considerable power, and upon whom much responsibility would devolve. Each would appoint a Registrar for its own district, the Registrar for England being also Registrar-in-Chief to the General Council. These officials and their clerks would compile the Registers and manage the finances, and when necessary investigate and report irregularities to the branch and General Councils, who would have power to deal with them.

Another important function to be performed by the General Council is the supervision of examinations. The only body to whom the privilege of examining is given in the Bill as at present drafted is the Institute, the examiners being paid for their services; but it is quite conceivable that at some time the Institute might refuse to act or do so inefficiently, and power is reserved under such circumstances to substitute some other body. At the same time reasonable uniformity of standard must be maintained, and that a satisfactory standard; and to ensure this, supervision is necessary, combined with the power of depriving any body of the privilege of examining if necessary. Under the extreme circumstances of no body being willing to examine satisfactorily, the Council would themselves have power to appoint examiners, after appeal to the Privy Council.

Again, sir, I find that I have written a lengthy letter, while dealing only with the administrative machinery of the Bill, and that I must defer the consideration of other equally important points to a future occasion.—Yours truly,

G. A. T. Middleton.

ALLIED SOCIETIES.

LEEDS AND YORKSHIRE SOCIETY.

Architectural Education in Leeds.

The *Yorkshire Post* of the 15th inst. has the following comments upon the architectural classes held by the Leeds School of Art under the auspices of the Leeds and Yorkshire Society:—

A new work of some account in its bearing on the fabric of Yorkshire cities and towns has been initiated by the President and members of that very active body, the Leeds and Yorkshire Architectural Society. It is the founding of an approximation to a School of Architecture in which students may fit themselves for the responsibilities of the architectural profession and prepare for the Preliminary, Intermediate, and Final Examinations of the Royal Society of British Architects. It will be noticed an "approximation" to a School of Architecture is referred to. This means that owing to lack of finances the promoters have to attain their end by devious ways, being unable to proceed by the direct path that has been taken in Manchester and Liverpool. In these two Lancashire cities Chairs of Architecture have been endowed at their respective Universities. To endow a chair at the Yorkshire College for the same purpose would require a capitalised sum equal to £400 or £500 per annum. It is impossible at the present time to raise this amount of money, and under the circumstances the Society has had recourse to the ingenious expedient of utilising existing classes at the Yorkshire College and the Leeds Institute, in conjunction with classes that are to be specially organised at the Institute, and at the Society's headquarters, to cover the whole course of architectural study.

Whilst the scheme is by no means perfect it will at least go a long way towards remedying a state of affairs that was inimical to the best interests of the profession in the area served by the Leeds and Yorkshire Society. Until Mr. Butler Wilson took office as President of the Society in 1901 there was no facility for organised study offered to the student. The architectural profession is an open one. It may be practised by any person, no matter what his qualifications, who cares to style himself an architect. But membership of the Royal Institute of British Architects, a chartered body of long standing, is of necessity by examination; and it was to encourage students to set upon themselves the hall-mark of membership that Mr. Butler Wilson put on foot the movement that has led to this composite School of Architecture.

Broadly stated, engineering subjects of which the practical architect must have knowledge are to be taught at the Yorkshire College, the preliminary course of design is to be taken at the Leeds Institute, and the advanced course of design will be taken at the Society's rooms. The authorities of both the Yorkshire College and the Leeds Institute, it should be stated, are in thorough sympathy with the ideas that have actuated Mr. Wilson and his fellow-members, and for the purpose of ensuring the classes that have been organised at the Leeds Institute the benefit of his educational experience Mr. Wilson has been co-opted a member of the committee of the Institution. The extent of the work to be undertaken by the teacher of architecture, Mr. F. Musto, at the Institute may be gauged from the syllabus that has just been prepared. Classes are provided for the whole of the subjects set in the Intermediate Examination, ranging from classic ornament to elementary applied building construction. Out of the seven subjects set in the Final Examination the Leeds Institute will provide two classes, the Yorkshire College will provide three (one being contingent on the number of students), and the Society will provide four at its rooms.

As regards Design the syllabus states that the work done will be of an entirely practical nature, the problems set and the sites worked upon being such as actually occur in practice. In each case the application of the principles of design will first be emphasised, followed by historical and modern illustrations, as a base for the students' work. The students will then work out their own ideas, and the designs will afterwards be considered collectively by the Master, and criticised by visitors nominated by the Leeds and Yorkshire Society as follows :—

1903.		
Sept. 24.	Introductory Lecture.	Mr. Butler Wilson [*F.*].
Oct. 1.	A Country Chapel (Renaissance).	Mr. C. B. Howdill [*A.*].
Nov. 5.	Details of Roof and Main Gable to the previous subject.	Mr. G. F. Bowman.
Dec. 3.	Bank for small town.	Mr. G. B. Bulmer [*F.*].
1904.		
Jan. 14.	Details of Front to ditto.	Mr. H. S. Chorley, M.A. [*A.*].
Feb. 4.	Remodelling Old House, and Details of Bay Window.	Mr. Butler Wilson [*F.*].
Mar. 3.	Oak Staircase to ditto.	Mr. W. H. Thorp [*F.*].
April 7.	Gateway and Iron Gate to Bank.	Mr. E. J. Dodgshun [*F.*].

THE NORTHERN ASSOCIATION.

Mr. William Glover [*F.*] has given £1,500 in Consols to the Northern Architectural Association, of which he is Past President. The sum of £500, with accumulated interest, may be withdrawn at a future date towards the cost of a building for the Association. The annual interest on the remainder is to be used for the Society's educational work. The hon. solicitor is preparing the necessary trust deed.

LEGAL.

Concrete Floors in London Flats.

At the West London Court recently Messrs. Flew & Son, builders, of Fulham, were summoned at the instance of Mr. F. W. Hamilton, district surveyor, for committing certain irregularities in the construction of a block of flats in Edith Villas, West Kensington. Mr. John Haynes, who supported the summons, said the Building Act required that all the floors and staircases of buildings which consisted of separate sets of chambers and offices adapted for the occupation of different persons should be constructed of fire-resisting material. In this case the defendants had simply laid down wooden joists on the ground floor, and it was most essential for the protection from fire of dwellers in such flats that that section of the Act should be rigidly enforced. The district surveyor called the attention of the builders to the irregularity, but instead of remedying the defect they went on more vigorously and completed the building. Mr. Hamilton admitted in evidence that all the upper floors of the flats were properly constructed of wooden joists filled in with concrete.—Mr. Blanco White (for the defence): You have passed other flats erected by the firm in which the ground floors have been constructed in a similar fashion to these in Edith Villas?—Witness: Yes; but my opinion was changed after the recently held meeting of the District Surveyors' Association.—The Magistrate: I suppose you had considered that concrete flooring was unnecessary on ground floors because there was no draught, as in upper floors.—Witness: That is so.—The Magistrate observed that no doubt the suddenly altered interpretation put on that section of the Act by the surveying authorities had placed the defendants and other builders in a difficulty, but the Act must be obeyed. He adjourned the case to enable the defendants to comply with the regulations.

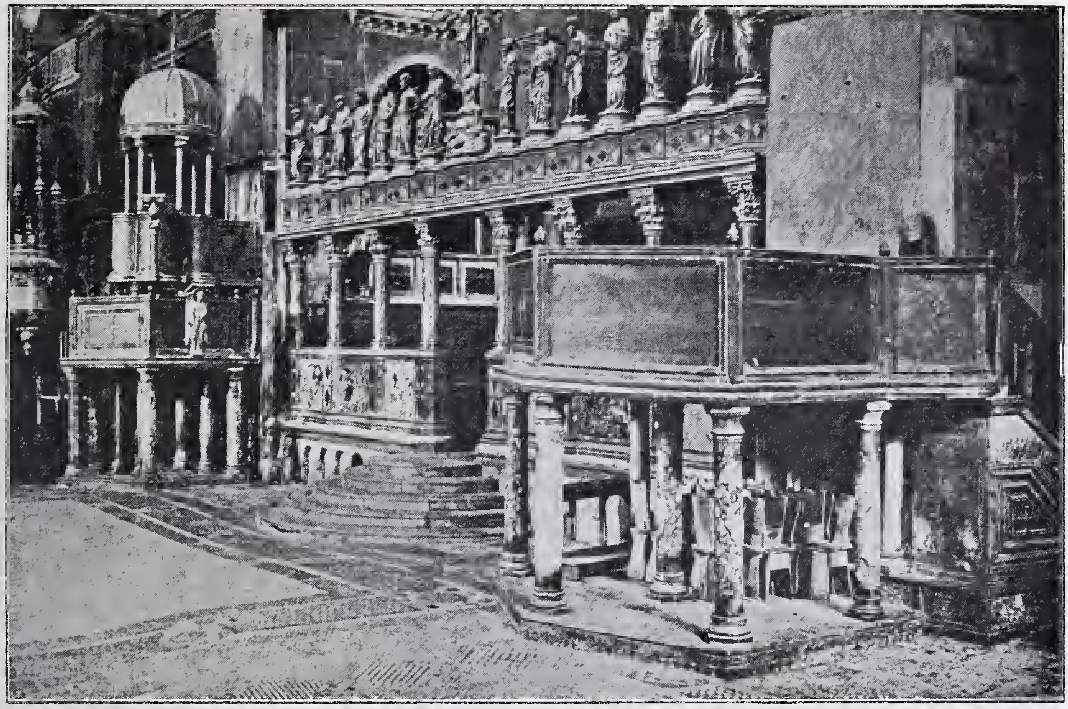

FIG. 1.—PORPHYRY PULPITS, WITH COLUMNS OF VARIEGATED MARBLES, ST. MARK'S, VENICE.

MARBLE.

ROYAL ACADEMY LECTURES 1903.—V.

By Professor Aitchison, R.A.,

PAST PRESIDENT, ROYAL GOLD MEDALLIST.

I HAVE already given you a lecture on external colour. In certain climates no external colour is more delightful than that produced by the judicious use of marbles; but, in spite of what Charles Garnier said, it is impossible in my opinion to use marble for outside work in London, for it not only rapidly decays in the corrosive atmosphere of London, but gets so smirched with dust and soot that it ceases to be delightful.

I once used some marble externally to give effect to a building, but on passing it after a few years I did not observe that there was any marble on it, the marble being so corroded, so stained by the weather, dust, and soot, that it was not distinguishable from the Portland stone of which the outside was built. When marble is used inside a building, and proper care is taken to have it rubbed up and occasionally repolished, it forms, in my opinion, the most dignified colour; although great care must be taken to harmonise the colours properly; it has, however, this drawback, that we rarely want in England a material that is cold to the touch, and in the misty air of London is mostly damp, even when the mist does not turn into water and run down the marble in tears.

I have before mentioned that the porphyries, and some of the granites, withstand the London atmosphere well. I recollect Sydney Smirke telling me that when he completed the Carlton Club he found that the original granite shafts, which had got smirched with soot and dust, were not in the least corroded by the atmosphere of Pall Mall; for after he had them sponged down he examined them with a strong magnifying glass, and could not observe any difference between their polish and that of the new ones that had just been put up ten years afterwards; but although granite will take a high polish, grey granite is generally too cold in colour, and the red is not only poorly coloured, but is speckled; therefore, unless you merely want to represent strength, I do not think granite is to be recommended as a coloured material. Green granite looks rather spotty from the crystals in it.

Although people are said to be very wealthy just now, it is doubtful if any private person, however rich he be, would indulge in the costliness of porphyry merely for his own delight. We know it has been given for portions of Roman Catholic churches by devout and wealthy persons, but that puts its use in the light of an offering to the Almighty, and not as an advertisement of the owner's wealth.

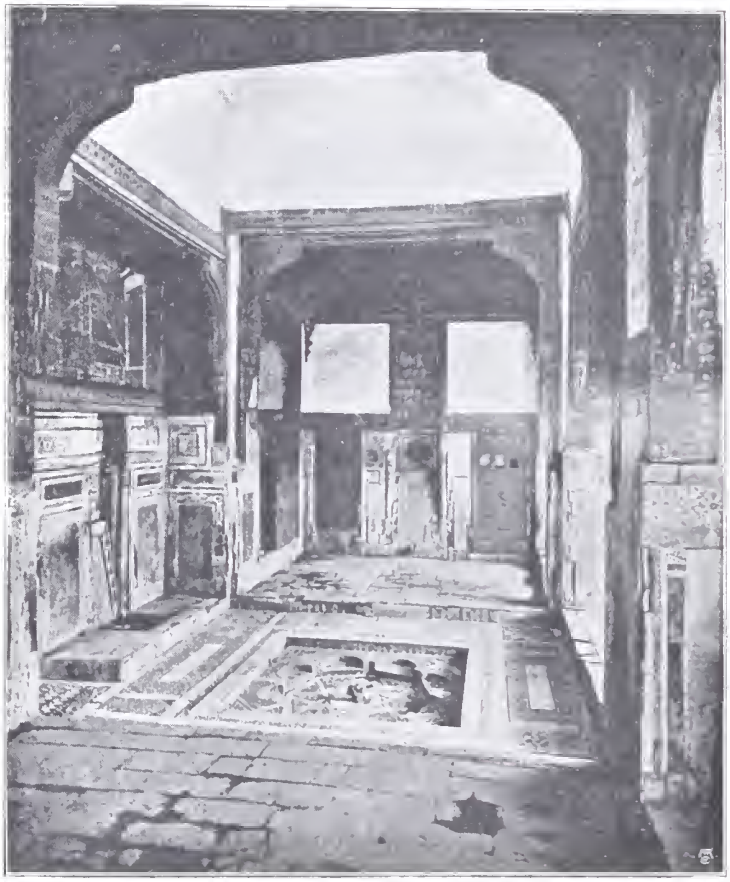

FIG. 2.—A HOUSE IN CAIRO, WITH ANCIENT MARBLE AND PORPHYRY.

The Roman emperors had a taste for certain classes of marble for some of the more favoured chambers in their palaces, the ophites particularly; Augustus preferred one sort, Tiberius another—they were, I suppose, Egyptian serpentines; but as these palaces perished long ago we have no means of comparing their views of delightful colour with our own. In the Pantheon at Rome the columns are of pavonazzetto and giallo antico, and are used alternately to each niche. The pavement is said to have been designed by the architect of Theodoric the Goth.

As purple porphyry was the imperial colour of the Romans it is possible that many of the emperors had rooms lined with it; but as far as we know at present the only building that was entirely lined with purple porphyry was the building in the grounds of the palace at Constantinople, where the young princes of the ruling family were born, and hence the saying "born in the purple." There has been much discussion about the colour of the Roman Imperial purple: but we know what it was in the days of Justinian from the mosaics of him and the Empress at San Vitale and other churches at Ravenna. The colour is that of the flower of the auricula.

Although there is some interest in antiquarian researches, my giving you this lecture on marble is not so much to describe what has been done as to give you a little practical advice on the use of marble. There are very few places where it has been used that you can see in their original glory, though there are still a great many churches and cathedrals abroad where marble has been lavished; but all the best of them have got harmonised by time, and this is particularly the case with St. Mark's and Santa Sofia. I have often thought that if we could have seen St. Mark's when it was just completed in its present form, it is doubtful if we should consider its effect so harmonious as it is now, but barbarously discordant. I once was at San Vitale at Ravenna when some of the plinths of the columns had just been renewed with new red and white streaked rosso antico, in which large masses of red and white were in conjunction, reminding us too strongly of the beefsteaks in the butchers' shops with a great allowance of fat, and harmonising, if one may use such a term, most abominably with the old work. As even comparatively cheap marble is too expensive for most people, we cannot say that the modern architect has ever been able to do his best, though he might and ought to have done the best with that which could be afforded.

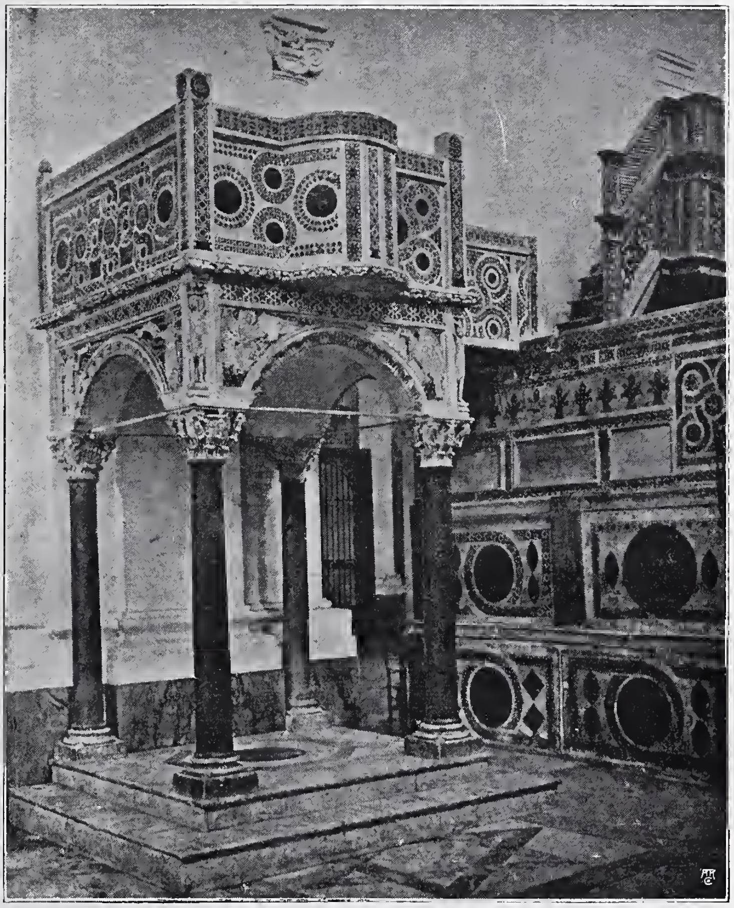

FIG. 3.—PULPIT WITH PORPHYRY WORK AT RAVELLO.

There is some marble work in the Arab Hall of the late Lord Leighton's house, but he was obliged to use the marbles he could afford; the shafts of the large columns at its entrance were obliged to be of caserta to be afforded at all; and the string, which was to have been a finely coloured specimen of Irish green, turned out on being cut to be mainly grey and white; the marble mason said he picked out the best block he could meet with, but if he had been compelled to have all the string green it would have cost a thousand pounds. It is necessary, if you want marble in shade to show, to have very strong contrasts, for in the case I have mentioned the Genoa green and Belgian blue are hardly to be distinguished from each other in daylight. There is some marble work round the staircase of Lord Leconfield's mansion at Chesterfield Gardens, but even here the shafts were only of Devonshire marble. The only marble work on a large scale that has been kept up to its original brightness is that used at Versailles, which is mainly of campan vert and campan mélangé, and that in some of the churches in Genoa.

The great examples that we have of decoration by means of marble and mosaic are St. Mark's at Venice and Santa Sofia at Constantinople, and both have the finest specimens known plundered from old buildings. The columns of the nave of St. Mark's are believed to have been plundered from the palace of Mausolus; the whole of the Roman empire was ransacked for the columns and marbles used at Santa Sofia: and as the religion had changed, the emperor was not only reckless about destroying temples for the sake of fine specimens of marble, but the mere desecration of the temples was supposed to bring him a step nearer Paradise; but, as I said before, any harsh contrasts that once existed have been toned down by the lapse of time, so that they now harmonise well.

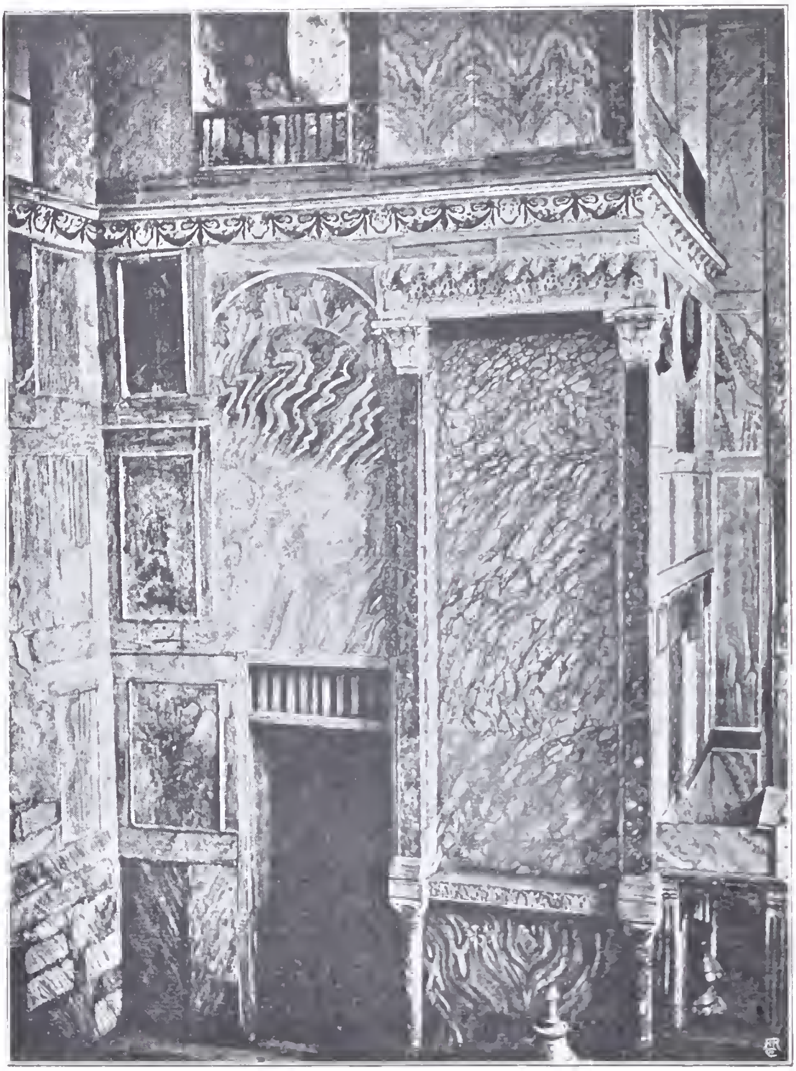

FIG. 1.—ANCIENT MARBLE DECORATION IN A CHURCH (USED AS A MOSQUE) NEAR THE AQUEDUCT OF VALENS, CONSTANTINOPLE.

When we have an opportunity of using marble largely it should be the aim of the architect, not merely to secure dignity, but to produce permanently lovely effects; for we may be sure of getting a dignified effect by confining our contrasts to white and black. Some of the churches in Venice show us this, as well as the tombs put up in the days of Queen Elizabeth in both the aisles of Henry VII.'s chapel.

The Byzantines were, I think, admirable users of marble. One of the most charming effects I know is that at "the Monastery in the Fields at Constantinople" (Μονὴ τῆς χώρας), of which I think Mr. Barnsley has a coloured sketch.

Thanks to the knowledge and sagacity of Mr. Brindley * and some of the French architects, most of the antique marbles have been bereft of their title "antique." The title "antique" was applied to marbles that came from unknown quarries or from quarries that were supposed to be worked out. Mr. Brindley * discovered the old quarries of pavonazzetto in Phrygia, called by the Roman writers Docimænian from Docimæum, and Synnadic from Synnada, and the verde antique in Thessaly; the French have discovered the giallo antico and many other fine marbles and fine breccias in Algeria and Tunisia. I do not think anyone has yet found the quarry of the breccia of Septimius Bassus, called by the Italians *breccia di Sette Basi*, of which the late W. Burges had a specimen in his hall. There are splendid specimens of verde antique in the shape of columns at Santa Sofia, but the most beautiful specimen that I have seen was in the possession of the late Mr. Holford at Dorchester House, where it was used as a table top; and our friend Commendatore Boni restored a very beautiful specimen of verde antique in the church at Venice where Othello is buried. When I say restored, he had the shaft repolished, and it now has the effect of a bit of forest at the end of a late spring.

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* See various Papers by Mr. Wm. Brindley in the Institute TRANSACTIONS and JOURNAL.

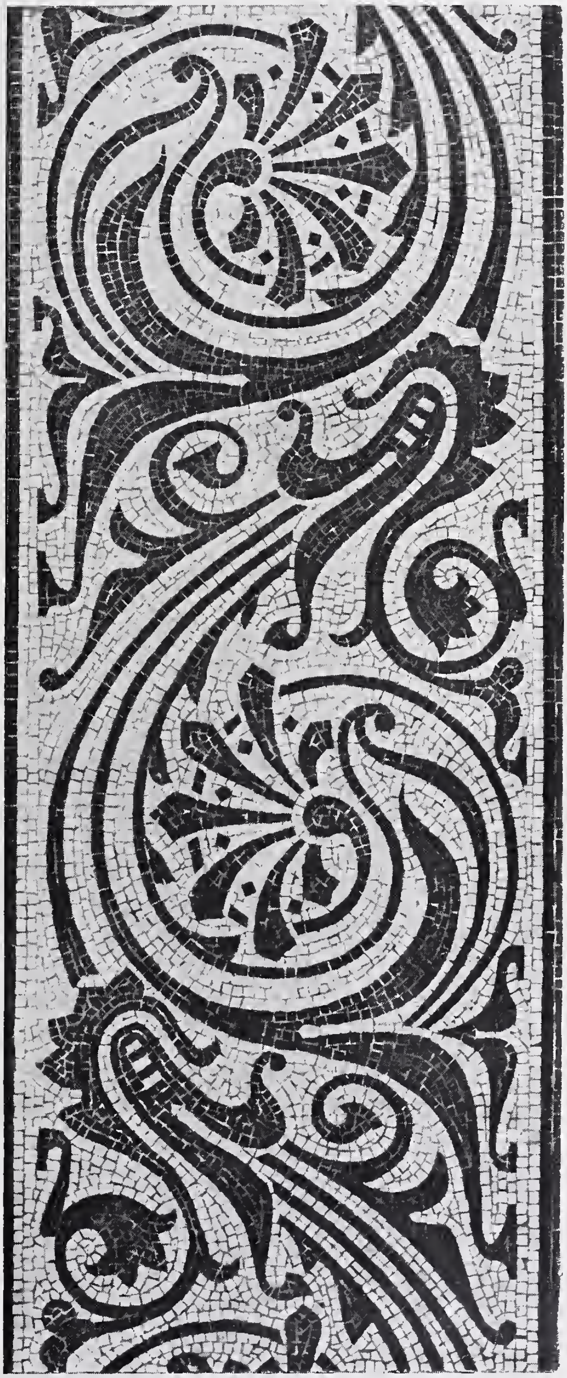

FIG. 5.—MARBLE MOSAIC DESIGNED BY THE LATE F. P. COCKERELL, AND CARRIED OUT BY MESSRS. BURKE & CO.

Marble is so beautifully coloured and varied by the hand of nature that it seems impossible to make anything vulgar with it; but you may see some of those pedestals on which busts were put a century or two ago that are almost as vulgar and quite as discordant as the attempts of an ignorant and tasteless person to make agreeable harmonies with colour. I would here remark that, however harsh and discordant colours may be, either in marble or in manufactured things, the colourist will always be able to use them so as to be agreeable to the eye, if the ratio of the coloured piece to its surroundings be in his hands; *e.g.* those abominable satin ribbons of the Stewart plaid can be made quite useful as a sort of centre of attraction where the bulk of the surroundings is very dark or uniform; but it is impossible to give instruction to people who have no eye for colour. The best advice I ever heard given on this subject was by the late Mr. Brett, who was criticising some pictures adversely, and rather severely, and the artist was defended by someone who said that he was very clever in his designs, and his outlines were superb, but he had no eye for colour. Mr. Brett said: "Then he ought to have turned sculptor, because a man who has no eye for colour has no business to be a painter."

Salvi, called Sasso-Ferrato, is, I believe, a very tolerable composer in form and light and shade—I remember admiring a print of one of his pictures in a shop I used to pass—but he is a most abominable colourist, whose pictures set your teeth on edge.

A careful study of colour in flowers and leaves may teach you a good deal. You will see that the particular green of the leaf, even in one species when it has different-coloured flowers, is modified in accordance with the colour of the flower; but Nature has so many thousand ways of varying the colour that it is almost impossible to seize on the devices she uses to make all sorts of colours harmonise with different shades of green. Sometimes the texture of the leaf is different from the usual texture of leaves; sometimes the necessary gradation is got by the shades due to different curves; and the contrast between the shapes of the flowers and the shapes of the leaves is a very important element in their harmonious combination, though it is not colour.

Most of the Oriental nations have a love for magnificent harmonies of colour; but I am not sure that some of the most delightful harmonies are not those where the difference between the pattern and the ground is from nearly light to one considerably lighter or darker than the ground. I am not sure that gentle gradations, with here and there strong contrasts of the same tints, are not as beautiful as anything. A very beautiful instance of this is in the marble called *fiore di pesca*, or *fleur de pêche*. Where strong contrasts are used, such as between black and white, the beauty depends on the ratio; anything like equality makes it vulgar. What we now call pavonazzetto is generally not the real marble, but merely marble somewhat resembling it. The real pavonazzetto, or synnadic, always has red in the black and grey streaks. One of the Latin poets calls the red the blood of Atys.

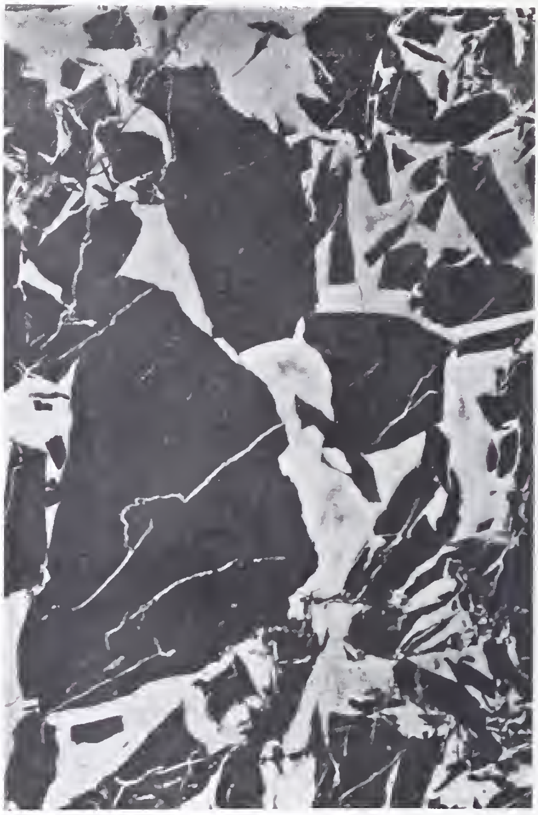

FIG. 6.—GRAND ANTIQUE FROM THE PYRENEES.

Largely used in the Tomb of Napoleon I., notably the four large twisted columns supporting the baldachino.

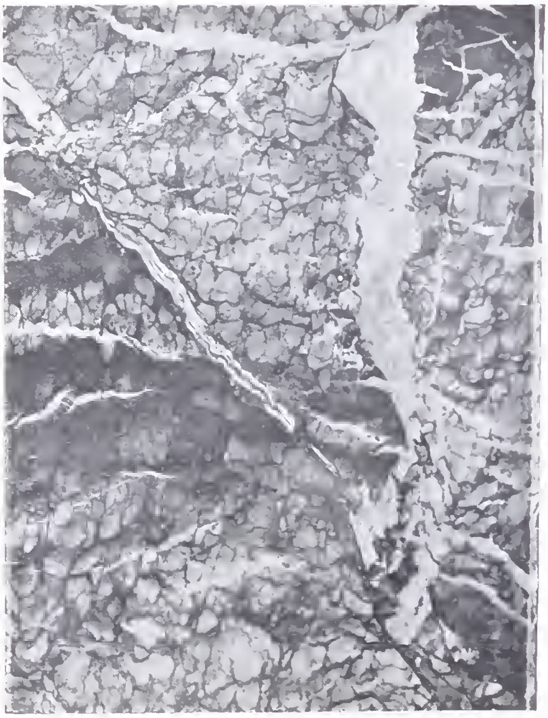

FIG. 7.—CAMPAN VERT FROM THE PYRENEES.

There is very little marble work in England, so it is difficult to point out fine examples; and even abroad it is not easy, as almost all the best examples have been brought into tone by age. Perhaps it is one of the things which we most regret, that the palaces of the Cæsars have been destroyed, where cost was no object; and with that capacity for obtaining dignity which the Romans

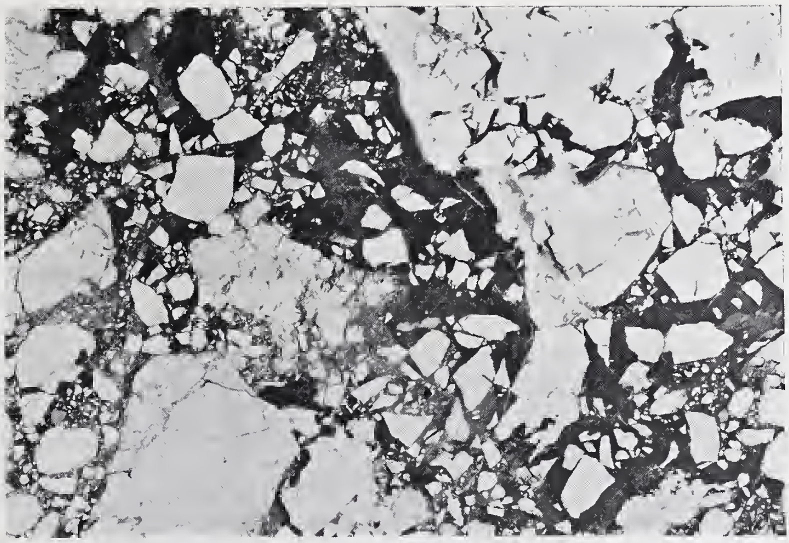

FIG. 8.—BRÈCHE ORIENTALE.

had we must suppose that some of the effects were very fine. One of the chambers in the Baths of Titus is said to have been wholly paved with lapis lazuli, which suggests to us a most gorgeous and enchanting vision. I do not know whether he has got it still, but Mr. Brindley once had a splendid slab made up of pieces of lapis of different tones and tints.

It always strikes one that the Romans must have got superbly dignified colour effects from the care which some of their best men took to choose marbles which were by no means of great brilliancy. The marble that the great Lucullus picked out, which is still called Lucullean, is said to have been quarried from an island in the Nile; it is a bluish black, perfectly uniform in colour, except that it looks as if dust had been lightly sprinkled over it.

Corsi, who was a Roman barrister, devoted a good part of his life to identifying the different marbles used by the ancient Romans, and published a book on them at Rome in 1845. His magnificent collection of marbles got together from Roman ruins was bought of him by the Duke of Devonshire, and presented by the Duke to the Radcliffe Library, and was eventually taken to the Oxford Museum, where, by the kind offices of the late Sir Henry Acland, I was enabled to see it. Corsi's own slabs, with much smaller specimens let into

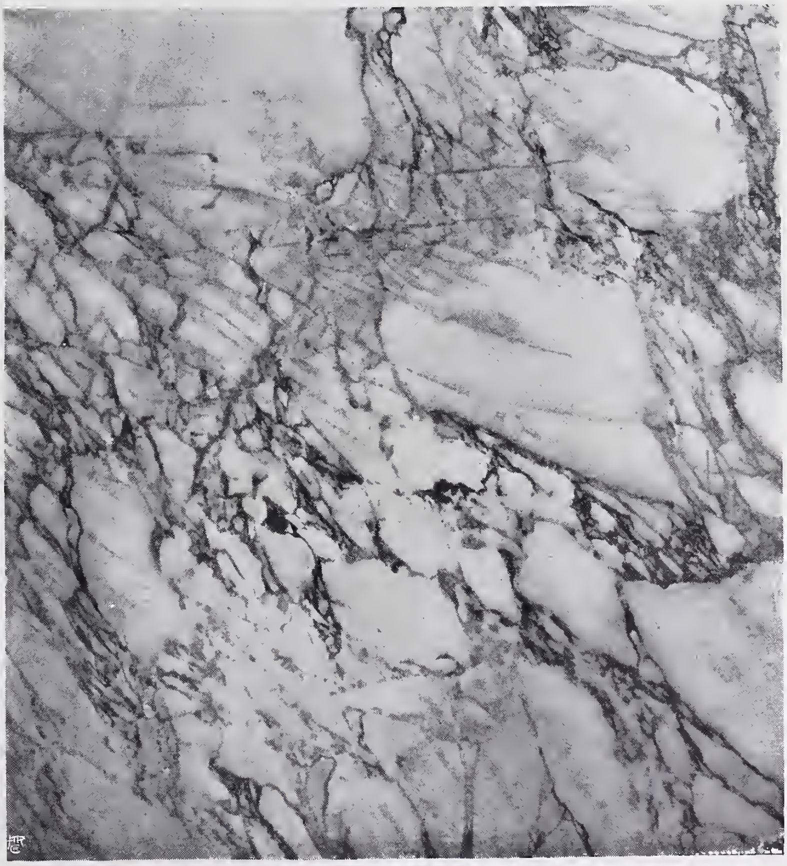

FIG. 9.—SKYROS MARBLE.

white marble, were preserved for many years at the Geological Museum in Jermyn Street, where they may be still, for aught I know. They were two large slabs of white marble, in which the various specimens, about one inch square, were embedded; but unfortunately they were placed in two window-backs, so that the specimens could only be seen by a candle or by having the slabs moved to a proper light.

One thing I did not mention: the architect of the cathedral at Genoa had a beautiful green marble shaft which did not match the height of the others, and he simply lengthened it by adding a foot or eighteen inches of white marble at the bottom, which looks very well.

Perhaps the best place in London I can recommend you to see is the Brompton Oratory, in which there are some very fine specimens of rare marbles, and some of the chapels are harmonious. The most beautiful thing in it, I think, is the old inlaid altar-piece in the south transept.

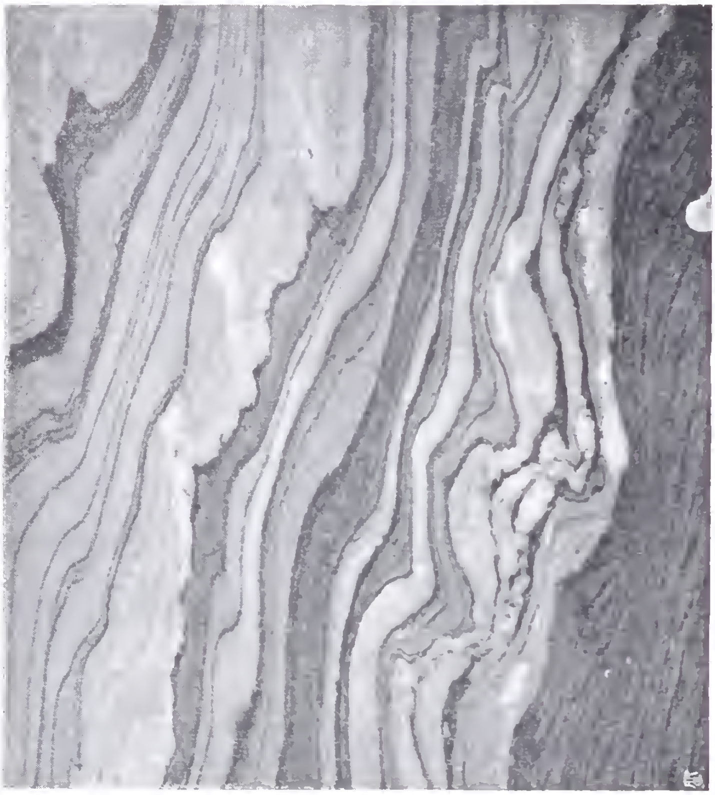

FIG. 10.—DARK CIPOLLINO.

The Romans must have rifled every known quarry to get their fine marbles; and that this passion for rare marbles was very great the following remarks will show. There is a marble that is now known as Astrakhan, but geologists who have travelled over that part of the world say that none of that marble which is so named is to be found there, but one that is very like the Astrakhan of antiquity has been found in quarries near Delhi in India; and, if this be true, it must either have been found by a merchant who had gone there, or have been forwarded in the ordinary way of trade to Ceylon, to be brought thence by the Red Sea or the Persian Gulf to the caravan that supplied Rome; and at a late time of the Roman Empire some of the enormously wealthy nobles must have thought there was sufficient incentive to buy at most extravagant prices rare marbles to make themselves known. The tax on marble must have formed a considerable asset in the Roman budget, for every marble quarry, I believe, in the Roman empire was set apart for the emperor, and probably a heavy tax was levied on those who could get permission to use the marble. In the late empire the penalty of death without benefit of clergy was incurred by people wearing, even temporarily, a cloak of the imperial dye, so I suppose the use of purple porphyry was prohibited. This, however, might not have been a mere childish vanity on the part of the emperors, but a hint that his post was not so secure as he thought,

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[*] The light cipollino looks something like a cut onion, as may be seen in the columns of the portico of the temple to Antoninus and Faustina in the Roman Forum.

for that some of the great men in remote provinces were ready to raise the standard of revolt. I know there is a case where at a feast the retainers of some great man when they were drunk put an imperial purple cloak on their master, much against his will; but I think it was considered so unpardonable an offence that he was executed.

The greatest display of marbles that we have now is in the popular hotels and restaurants. I could give you a long list of the marbles that we know were used during the time of the Roman empire, most of which have been catalogued by Corsi, but I have had some specimens lent me by Messrs. Burke * and Mr. Brindley to show you some of the beautiful varieties that still exist. It would be a great convenience if some Englishman would re-edit Corsi's book and give a good alphabetical index, for whenever the English begin to build magnificent buildings marble will certainly be used inside, if our wealth continues to increase. It is unfortunate that those who have the opportunity of using marble are not always colourists.

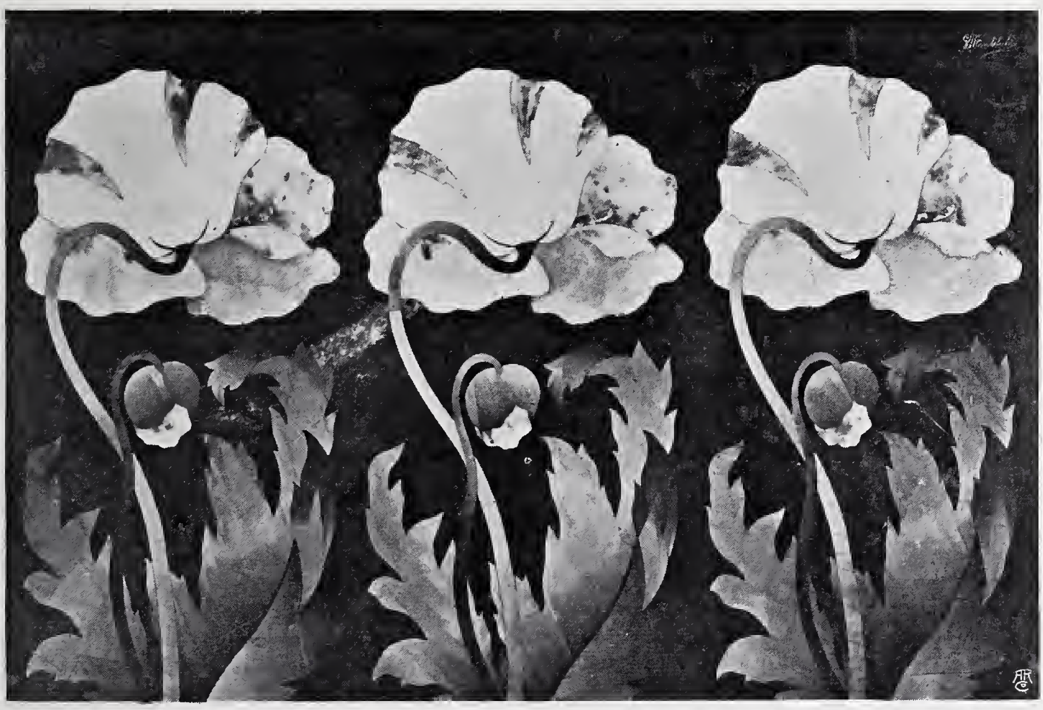

FIG. 11.—FLORENTINE PIETRA DURA.

I have not said much, but I thought it would be better to give you a short lecture than to fill it up with long lists even of the most beautiful marbles, with the places they come from. I would beg you to observe that even when you see marbles that have not been well assorted it is not always the architect's fault; it may have happened that marble was wanted, but that the funds at his command would not purchase marbles to harmonise properly with each other.

Pliny, in his *Natural History*, under the head of Natural Science, says:

> "It now remains for us to speak of stones, or, in other words, the leading folly of the day . . . for everything of which we have previously treated, down to the present book, may by some possibility or other have the appearance of having been created for the sake of man; but as to the mountains, Nature has made those for herself, as a kind of bulwark for keeping together the bowels of the earth;

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* The specimens illustrated in Figs. 5 to 12 were kindly lent for the present purpose by Messrs. Burke & Co.

as also for the purpose of curbing the violence of the rivers, of breaking the waves of the sea, and so by opposing to them the very hardest of her materials, putting a check upon those elements which are never at rest. And yet we must hew down these mountains, forsooth, and carry them off; and this for no other reason than to gratify our luxurious inclinations: heights which in former days it was reckoned a miracle even to have crossed! . . . For what utility, or for what so-called pleasure, do mortals make themselves the agents, or, more truly speaking, the victims of such undertakings, except in order that others may take their repose in the midst of variegated stones? just as though, too, the shades of night, which occupy one half of each man's existence, would forbear to curtail these imaginary delights?"—Lib. 36, cap. 1.

It is curious to see how the Romans carried even into the empire their original characteristics of ferocious peasants. Cato indulges in diatribes against the use of the bath, and tells us that in his youth people never washed themselves all over except once in ten days, and is very indignant with their using hot baths; and so Pliny, with equal reason, objects to the use of marbles. One of the great ends of civilisation when people have accumulated riches is to know how to spend these riches for the delight of themselves and others, and the Romans very properly, when they became rich, spent large sums on giving the dignified appearance produced by marble to their houses or palaces. We never hear any complaints of the expense of men butchering one another, or of being torn to pieces by wild beasts which had been brought at great expense from Asia and Africa, because this expense was supposed to be useful in keeping up the natural ferocity of the people; but any outlay that was devoted to what we should call refined enjoyment was looked upon as a most culpable extravagance.

The great American novelist Nathaniel Hawthorne was naturally struck by the dignity of marble, as you will see in the following extract from his *Transformation*, but he does not treat it as a poet would who was raised to ecstasy by lovely harmonies of colour.

"This beautiful hall was floored with rich marbles, in artistically arranged figures and compartments. The walls, likewise, were almost entirely cased in marble of various kinds, the prevalent variety being giallo antico, intermixed with verde antique, and others equally precious. The splendour of the giallo antico, however, was what gave character to the saloon; and the large and deep niches, apparently intended for full-length statues, along the walls, were lined with the same costly material. Without visiting Italy, one can have no idea of the beauty and magnificence that are produced by these fittings-up of polished marble. Without such experience, indeed, we do not even know what marble means, in any sense, save as the white limestone of which we carve our mantelpieces. This rich hall of Monte Beni, moreover, was adorned, at its upper end, with two pillars that seemed to consist of Oriental alabaster; and wherever there was a space vacant of precious and variegated marble, it was frescoed with ornaments in arabesque."—Vol. ii. chap. 15, p. 236.

"It is one of the special excellences of such a saloon of polished and richly coloured marble, that decay can never tarnish it. Until the house crumbles down upon it, it shines indestructibly, and with a little dusting looks just as brilliant in its three-hundredth year as the day after the final slab of giallo antico was fitted into the wall. To the sculptor, at this first view of it, it seemed a hall where the sun was magically imprisoned and must always shine."—Vol. ii. chap. 15, p. 238, *The Marble Saloon.*

⁂ Referring to the illustration on page 514 ["Coloured Terra-cotta," JOURNAL, 26th Sept.] Professor Aitchison desires it to be noted that the tile described as Indian came from India, but the art appears to be Chinese. In a letter on the subject addressed to the Editor, Mr. Matt. Garbutt [*A.*] says: "Is this an example of the ware made by the Chinese to supply the demand of the East India Company for export to Europe *via* India, or can it be an Indian copy? . . . The green beards referred to in the lecture have, as Professor Aitchison is doubtless aware, their counterparts in modern India, where some men stain their beards a bright brick-red which occasionally, from defects of the dye or from want of further treatment, degenerates into a purple or green tint. Mr. Mortimer Menpes, in his new book on the recent Durbar, speaks of his tonga-driver's beard as dyed magenta to hide the ravages of time."

9, Conduit Street, London, W., *17th Oct.* 1903.

CHRONICLE.

The A.A. Building Fund: The Institute's Donation.

At their meeting on the 5th inst. the Council unanimously voted a sum of Five hundred pounds as the donation of the Institute to the building fund of the Architectural Association.

The R.I.B.A. Standard Size of Bricks.

The following standard has been agreed upon between the Institute and the Brick Makers' Association, and has been drafted in consultation with these Bodies and representatives of the Institution of Civil Engineers, and ordered to come into force on 1st May 1904.

The Council recommend that members should insert this standard in their specifications under the title of "The R.I.B.A. Standard Size of Bricks."

1. The length of the brick should be double the width, plus the thickness of one vertical joint.
2. Brickwork should measure four courses of bricks and four joints to a foot.

Joints should be $\frac{1}{4}$ inch thick and an extra $\frac{1}{16}$, making $\frac{5}{16}$ for the bed joints to cover irregularities in the bricks. This gives a standard length of $9\frac{1}{4}$ inches centre to centre of joints.

The bricks, laid dry, to be measured in the following manner:—

- A. Eight stretchers laid square end and splay end in contact in a straight line to measure 72 inches.
- B. Eight headers laid side to side, frog upwards, in a straight line to measure 35 inches.
- C. Eight bricks, the first brick frog downwards and then alternately frog to frog and back to back, to measure $21\frac{1}{2}$ inches.

A margin of one inch less will be allowed as to A, and a half-inch less as to B and C.

This is to apply to all classes of walling bricks, both machine- and hand-made.

For convenience of reference the foregoing particulars of the standard will appear among the Institute Papers published in the R.I.B.A. Kalendar.

Competitions: Unsatisfactory Conditions.

The conditions of the following competitions are very unsatisfactory:

1. Shops and Workmen's Dwellings, Kilmarnock, N.B.
2. Public Library, Coedfranc, Skewen, Glamorganshire.
3. Pavilion and Winter Gardens, Bray.
4. Jeffs' Poplar Hydro, Matlock Bank.

It is hoped that no member of the Institute will enter for any of these competitions unless the conditions are considerably modified. Letters have been addressed from the Institute to the respective promoters, and the Secretary will be happy to answer any inquiries of members as to the replies that may have been received.

Congress of Hygiene and Demography, Brussels.

46 *Berners Street, W.*, *25th September* 1903.

To the President and Council of the Royal Institute of British Architects.

Gentlemen,—I beg leave to report that, together with Mr. T. W. Cutler, I attended the International Congress of Hygiene and Demography, which was held at Brussels from the 2nd to the 8th September last, under the presidency of M. Beco, Secretary-General of the Department of Agriculture, M. Putyeys being chief secretary. The Congress was opened by H.R.H. Prince Albert, who was accompanied by M. de Favereau, Minister of Foreign Affairs, M. Francette, Minister of Works, and many others. The main questions discussed at the meetings were more of a medical than an architectural nature, the sections being devoted to the following subjects: 1. Bacteriology. 2. The Hygiene of Food. 3. Sanitary Technology. 4. Industrial and Professional Hygiene. 5. The Sanitary Transport of both Human Beings and Animals. 6. Administrative Hygiene. 7. Colonial Hygiene; and 8. Demography. In the sixth section there were some interesting discussions on workmen's dwellings, and it was evident that England is far in advance of other countries in the matter of official superintendence to ensure that these should be constructed and attended to with due regard to sanitation. The delegates were most hospitably received and entertained by their Belgian *confrères*. A reception was held by H.R.H. Prince Albert at the King's palace; a most charming conversazione was given by M. de Mot, the Burgomaster, at the Hôtel de Ville; and there were other entertainments, including visits to Antwerp and Spa, where the delegates were the guests of the municipalities. Fortunately the weather was very fine during nearly the whole time, and this added largely to the pleasure of the visit.—Faithfully yours, JOHN SLATER.

Special Election to Fellowship.

At the meeting of the Council on the 5th inst. the following gentleman was elected to the Fellowship under the proviso to By-law 9, viz.:

ARTHUR SOUTHCOMBE PARKER [*A.*], *President of the Devon and Exeter Architectural Society*; of 20, George Street, Plymouth.

M. Choisy's Researches.

From PROFESSOR AITCHISON, R.A.—

Our learned and illustrious Corresponding Member, Monsieur Choisy, has just published "The Art of Building amongst the Egyptians," and has shown us how the Egyptians took advantage of the original settlement of their walls in sun-dried bricks to develop a scheme for the stability of all their walls, for these curved lines of wall appear to have been carried out when the facing was of stone, as may be seen at Philæ and Karnak. The crude brick walls were apparently used as staircases for the workmen, and were for this purpose left in steps. One of the great discoveries is that the machine which was taken for the centering of an arch was really a machine for raising stones, not exceeding a ton and a half in weight, to their position, and to this machine M. Choisy has given the name of "the oscillating elevator," a rough account of which is found in Herodotus.

Where the stone walls themselves were insufficient for getting the stones up, separate staircases were built in crude bricks to supply their place, and the ruins of these may still be seen against the Pylon at Karnak. The methods employed for moving stones of enormous weight, such as form colossi and the obelisks, are also shown, and the whole treatise is as interesting as the "Arabian Nights," if the supernatural parts are left out. M. Choisy told me he was going to present one of these books to the Institute. I cannot help thinking that the Institute has been rather niggard to M. Choisy's incomparable discoveries when we consider that his treatises have formed text-books for the whole civilised world. I was once going over the Baths of Caracalla with the celebrated Italian architect, Signor Beltrami, and another Italian gentleman, who began to give us an account of how the vaults had been formed, when Signor Beltrami said, "When we have got Choisy's 'Art of Building amongst the Romans,' it is needless to go over the methods which he has so admirably described."

Rights as to Sewage.

In the present number are published some Addenda and Corrigenda to Mr. Algernon Barker's valuable Papers on "Rights as to Sewage" which appeared in the JOURNAL two years ago. In sending them Mr. Barker writes: "I hope I may be excused for any defects in previous issues, considering the great difficulty of the subject and the fact that mine was pioneer work in many respects. My task was to give a string of opinions on difficulties which to my knowledge are always arising, but which (luckily for the parties) are kept out of the Courts. The resultant defects were some inaccuracy now corrected, some lengthiness due to a desire for completeness and to the necessity of giving reasons on points not decided by cases, and also some dryness owing to the incorporation of references necessary to the use of these lectures as a *vade mecum.* Decisions subsequent to my lecture on 'Rights as to Sewage,' and also, I must own, mistakes on my own part, have made these addenda absolutely necessary to the usefulness of the lectures, and I think that, though both lengthy and dry, the addenda are at least accurate. I may refer to addendum (2) and to remarks at the end of these addenda." A series of Papers by Mr. Barker on "Duties as to Drains" appeared in the volume of the JOURNAL for 1902.

The late Henry William Brewer [*H.A.*].

Mr. H. W. Brewer, the gifted architectural artist who passed away on the 7th inst. at the age of sixty-seven, had been an Hon. Associate of the Institute since 1897. He was the son of the late Professor J. Sherrin Brewer, the historian, and was born at Oxford, and educated at Norwich and King's College, London. His art studies were directed by G. C. Stansfeld and William Warren, and he first exhibited at the Royal Academy in 1862. Architects are familiar with his work chiefly through the pages of *The Builder*, which among architectural journals seems to have enjoyed a monopoly of his talents for the past twenty-five years. Describing his work *The Builder* of the 10th inst. says:—

> Mr. Brewer's early contributions to our pages were simply illustrative: chiefly drawings of mediæval buildings in Germany, generally selected as rather out of the beaten track of architectural illustration. These he drew on the wood in a most masterly manner (the system of photographing on to the wood had not then come into use); they were noteworthy for the sense of composition and the breadth of light and shade effect which characterised them. . . . These impressions in our old volumes afford fine examples of what could be done with the aid of wood-engraving. . . .
>
> It was almost simultaneously with the introduction in our illustrative pages of lithography that Mr. Brewer seemed to perceive that there was a wider field for an architectural artist in black and white than the mere representation, in however powerful and artistic a manner, of existing monuments. Thenceforth, for our pages at least, he took up one or other of two new lines of illustration; one, the invention of architectural scenes purely with a view to picturesque effect; the other, the restoration in drawing . . . of monuments of the past which had dis-

appeared, but for the reconstruction of which a certain degree of documentary evidence could be found. To the first task he brought genius and imagination; to the second, learning and research. One of the first of his pen-drawings for lithography was one which in picturesque force and poetic feeling he perhaps never surpassed subsequently, the one entitled "Deserted," showing a mediæval city, with its cathedral rising in a heap in the centre of the composition, the houses clustering round and clinging to it, silent and deserted after a visitation of the plague—not an unknown occurrence in the Middle Ages. Among others of his architectural creations were two contrasted compositions entitled "Renaissance Gorgeousness" and "Romanesque Grandeur"; an exceedingly fine picture called "The Ancient Harbour" . . . and a remarkable drawing entitled "Measure and Value," which was not only an architectural composition but a critical protest. . . .

More numerous, however, than his purely imaginative works were his archæological creations. . . . To this kind of task he brought imagination based on careful research, and he spared no trouble in getting the materials for his restorations. His drawing showing a resuscitation of old St. Peter's at Rome was one of the most remarkable things of the kind ever done. . . . Among other remarkable drawings of this class were those of "London in the Time of Henry VIII.," Paris at the same period (bird's-eye views or panorama), "Mediæval Oxford" (also a panorama); another panoramic view of "Some English architecture of the past fifty years," done for the Jubilee Number of *The Builder*; Old St. Paul's; Nonsuch Palace; "Old Cheapside"; "Aldgate in 1531," and many others, showing the same remarkable union of archæological study with picturesque power. We have in our possession the last two drawings of this class which he made, and which still remain to be published: restorations of two quarters of Old Paris.

The old TRANSACTIONS of the Institute has the following papers by Mr. Brewer:—"On the Mediæval Architecture of Central and Southern Germany," TRANS. 1867–68, p. 144; "The Revival of Gothic Architecture in Germany and Holland," TRANS. 1871–72; "On the Churches of Brittany (North Coast)," TRANS. 1872–73, p. 166.

LEGAL REGISTRATION OF ARCHITECTS.

19 *Craven Street, Strand, W.C.*, 1st *October* 1903.

To the Editor of the JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SIR,—Before resuming the main subject of my present series of letters to you upon the exposition of the existing "Architects' Bill," I should like to challenge the pessimistic opinion of modern architecture expressed by Mr. Hadfield in the last issue of the JOURNAL, on which he, somewhat inconsequently, bases his objection to the great remedial measure now proposed. To us who live in London, at least, the modern work designed by properly trained architects seems instinct with beauty, original and true, as if we have reached the dawn of a great architectural epoch.

This, however, is beside the point to which I am immediately devoting myself, and I must apologise for the digression.

The portion of the Architects' Bill which has been most discussed is that which denotes what persons shall be entitled to be registered, and, so far as the first register is concerned, at any rate, there is certainly room for difference of opinion. The object kept in view by the framers of the measure has been to admit to the register all who would be, at the time of the passing of the Bill, accepted by their fellow practitioners as qualified men, as evidenced by their professional membership of any of the leading London and provincial architectural bodies; and of all who had a vested right to be allowed to earn their living by practising architecture, as evidenced by their having done so for nine years, or of having served an aggregate of twelve years as apprentice, assistant, or practitioner, "all or either."

These time tests are rigorous—much more so, if I remember rightly, than they were in the earlier drafts of the Bill—and might act harshly in many cases were it not allowable for any who had served an apprenticeship of three years before the passing of the measure, or having served less than three years had completed three years after its passing, to claim admission to the register on passing a single qualifying examination. It seemed impossible to deal satisfactorily with those who, while they had been engaged for a considerable period (less than twelve years) in architecture in all capacities, or less than nine years in practice, had never served an apprenticeship, and such have been left, as the Bill now stands, to serve their apprenticeship subsequently to its passing into law. This would be hard upon those who had nearly made up the required time, and the hardness might, I fancy, be obviated to some extent by reducing the period of apprenticeship in such cases to so much as would complete the twelve or nine years respectively.

After the passing of the Bill, the necessary time qualification, precedent to examination, would be *either* (*a*) three years as apprentice to a registered practitioner; (*b*) two years apprenticeship *plus* five years as an assistant; or (*c*) ten years as an assistant.

Fees, not excessive, but sufficient to meet working expenses, would be charged on registration of apprenticeship indentures, on admission to the examinations, and on registration as practitioner; and practitioners would also be called upon to pay an annual renewal fee, nominal in amount. This is not imposed as a tax—though it would be right for every member of a profession to contribute towards the expenses of its organisation—but mainly to ensure that each practitioner should communicate annually with the registrar, and so enable him to revise his register, and to omit the names of those who cease to practise and to pay their renewal fees.

In my next letter I hope to deal with a few remaining, and generally less important, points of the Bill.

Yours truly,
G. A. T. Middleton.

HIGHER ARCHITECTURAL EDUCATION.

29 College Road, Reading, 24th September 1903.

To the Editor of the Journal of the Royal Institute of British Architects.

Sir,—In Mr. Hudson's interesting article on "German Technical High Schools in Relation to Construction and Architecture, etc.," in the August number of the Journal, in referring to the proposed new buildings for University College, Reading, he says: "It does not appear, however, that architecture will benefit."

The Architectural and Building Construction classes at University College have been under my charge for the past thirteen years, and I shall be glad, therefore, if you will grant me the privilege of pointing out how the needs of architectural students in Reading and the neighbourhood are being met.

Classes are held at the College in the History of Architecture, Building Construction, Quantities, Mechanics, Surveying and Levelling, Geometry, Perspective, etc., which are attended by over one hundred students, drawn both from architects' offices and from the various workshops in the town and neighbourhood.

Further, I may say that all recent successful Reading candidates in the R.I.B.A. Intermediate and Final Examinations received their architectural education at University College.

It may also be of interest to state that the head of each department at the College was asked, by the architects of the proposed new buildings, to give details of accommodation required, and their requirements have been carefully considered and complied with in almost every detail in the preliminary sketch plans. This accommodation includes a suite of rooms for architectural classes and also a detached block for handicraft classes.

Although the foregoing does not completely satisfy the needs of higher architectural education, the foundation of a school of architecture in Reading cannot long be delayed; and this opinion is confirmed by several local Fellows of the Royal Institute of British Architects.

Yours faithfully,
Harry Hutt.

ARCHITECTURAL AND TECHNICAL EDUCATION IN THE UNITED STATES, etc.

By E. W. Hudson [*A.*].

My brief notice of Reading University, England (p. 507, *ante*), has elicited details of what is being done there, and they show considerable activity. The sum of £80,000 is to be spent on new buildings. From sixty to seventy students take the course of Building Construction, and about twenty take Quantities. Architectural students are not numerous, but they get individual attention from the Class Master. Lady students are taking up wood-carving very practically, and doing work for ecclesiastical and collegiate buildings.

Mr. F. H. Wright, Registrar of the Academic Board of Reading University, has favoured me with some notes by Mr. Owen Ridley, the chairman, who has visited some of the American colleges and reported upon their arrangements and methods of work. Mr. Ridley has a keen eye for matters connected with architectural training. He also notes the extreme facility with which money is obtainable in the States for educational purposes. In almost every case it seems that the mere mention of a deficit in income is all that is necessary to secure an immediate and all-sufficient response. Wealthy men, too, are anxious to devote large portions of their fortunes to founding colleges in new districts where towns and settlements spring up and rapidly grow into important centres of industry. Mr. Stanford, a gentleman desiring thus to serve a Western State, asked the President of Harvard what sum he thought necessary for establishing a complete institution, and, being told that ten million dollars would suffice, turned to his wife and said, "I guess we can do that!" *And he did it.*

Speaking of Chicago University, Mr. Ridley writes: "Finance never causes them anxiety. The deficit of this year will probably exceed a million dollars; but Mr. Rockefeller cleared off nearly as much as that the year preceding."

At Columbia College, New York, fifteen million dollars are now asked for to extend and further endow it.

At Minneapolis money is *lent* for fees, with no other bond for repayment but the student's honour! This reminds one of the reputed honesty of the people when Alfred ruled the land.

Mr. Ridley continues: "There is no difficulty in a good student getting *free education* in a State University. There is no charge for anything in rate schools. Some even provide lunch free. There is less difficulty in getting money from the State for education than for anything else."

How jealous this makes one for one's own country, and how one regrets the want of earnestness, the inattention, and often the insubordination and hindrance to the minority of good students, caused by the ill-bred majority in our own Evening Continuation schools! Truly may *The Builder* describe it as "winter pastime."

A few extracts about architecture from Mr. Ridley's report are of special interest here. Of Harvard it is said:—

> The principal building (after the Great Hall) and the newest, was the School of Architecture, built and furnished and given to the University by a gentleman, whose son had been educated at Harvard and died early, as an acknowledgment of his gratitude. No expense had been spared. A costly building, admirably adapted to its purpose, and furnished with most costly facsimiles of the world's great architectural features, in columns, façade, statuary, sculpture, &c. The drawing rooms were very large, and many students were working with great evident earnestness. Engravings and photos were covering the walls, and immense ranges of drawers holding photos of almost every noted building in the world. Also details of special buildings, &c.

Of Columbia University (New York) Mr. Ridley writes:—

> Architectural school very striking; full-size plaster specimens, immense cases of drawers containing photos of all important buildings in the world of which photos are available. Exhibitions on screens of result of "lessons by description." One student describes fully a building, the class make a drawing to scale as to what they consider the describer has portrayed. Exercise in careful and distinct explanation and in concentration of thought on elevation described.

From other sources comes the statement that the invested funds of Harvard amount to over £2,800,000, the income to over £125,000. Total receipts for 1902, £952,000; expenditure £750,000.

With all this munificence displayed for technical and art education, supported and partly controlled by successful speculators like Mr. Rockefeller and Mr. Carnegie, one marvels at the anomalies that present themselves in the cult of the finer instincts of the human race—*e.g.* Count Tolstoi, himself accused of being generations "behind the times," is denouncing the ways of the heads of these Western colleges as "barbarous," if not actually describing them as "barbarians." A very pretty quarrel, which reminds one of the pronouncement (half a century old) of Don Patricio de la Escosura in his great work, *España artistica y monumenta*, with which Count Tolstoi apparently agrees. Writing sixty years ago of the effect of civilisation upon art, the former says: "Les arts libéraux, et surtout l'architecture, n'ont rien gagné, ne peuvent rien gagner à l'esprit de la civilisation moderne." And yet the wildest dream of the Spanish dilettante could not have conceived the effect upon design of a high pressure civilisation like that of the United States.

From what I learn from Mr. Wright the interests of architecture at Reading appear to be in good hands in the person of Mr. G. W. Palmer, M.P.,* and the proposed new buildings will afford better facilities for architectural classes, which is something, though not all that is required for the higher education of students. It is something more to be able to hope for another school of architecture in England, to counteract the regrettable incident of such a departure to foreign shores as the proposed establishment by Mr. Alfred Gilbert, R.A., of a school of painting at Bruges; for though one admits the seductions of that and similar Continental cities, one cannot forget Chester, Coventry, Oxford, Winchester, and Wells. We are told "Bruges is one of the cheapest towns in Europe to live in." Is that inducement enough? Has it come to this? Well, one is thankful for Bushey in our own land, and grateful to Professor Herkomer for not forcing our young artists away to a strange land because living is cheap or art is only to be found abroad.

But, reverting to Reading, when I said—failing response to first inquiry—"it does not appear that architecture will benefit," I had in mind more particularly such a bequest as that of the late M. Jean Roux, who left a million francs to the École des Beaux-Arts, to be used for prizes for painters, sculptors, architects and engravers; or, better still, for advancing fees and providing scholarships and exhibitions, for the benefit of poor clever students whose careers are hindered by want of money.

We have no exactly similar institution to the *Société des Architectes Diplômés par le Gouvernement*, though the Institute fulfils some of its functions by awarding medals, prizes, bursaries, travelling studentships, &c., and the Benevolent Society, as far as it is able, gives grants in aid of those who have been unfortunate; but it is the young and struggling student who is not sufficiently provided for, and it should be by governmental care that the want is supplied.

It seems to me that architecture should have exceptional treatment, for it is to a large extent the nation's history in stone, the record for future generations to read even as they run; and if the limit of self-examination has not been passed, and one more comparison be permitted, we must own that this record writing is one of the things they, departmentally at least, manage better in France. The contrast between their method of organising public works and buildings and our own has been ably described by the late Secretary of the Institute, Mr. W. H. White, in his book *Architecture and Public Buildings*.

Another tour of inquiry into American systems—that sent by Mr. Alfred Mosely, C.M.G.—begins on

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* Mr. Palmer procured at some trouble and expense a portfolio, from the Maharaja of Jeypore, of over six hundred plates of working drawings of architecture, which can be seen at the College.

3rd October, when British experts start upon a visit to the colleges and schools; and after united inspection of Columbia College, some high and elementary schools, the Educational Alliance, University Settlement Society, the Normal College, Harvard, Yale, and perhaps Washington, the members separate, and individually study the special centres of work whose principles each is best acquainted with. Philadelphia, Chicago, Detroit, Niagara, Ithaca, and Albany, with the Carnegie Museum, will probably be visited. After the report of this deputation is received it will be a good thing if any result arises for the general welfare of English students.

It should not, however, be overlooked that such inquiry is not confined to Great Britain alone. Germans have made most complimentary statements regarding our Board Schools after inspection, and as I have felt bound to notice the waste of time and money in some of the London Board School evening classes, we may—*audire alteram partem.*

Mr. A. Shadwell's letter of 25th August in *The Times* points out how we are accustomed to criticise disparagingly our own work and systems. Referring to some remarks by the Bishop of Hereford, he writes: "English continuation schools command the sincere flattery of imitation in Germany." Dr. Kuypers, the inspector of the compulsory continuation schools at Dusseldorf, visited England for hints in view of their establishment, and he was "full of admiration for them, and expressed his obligation for valuable hints in the organisation of his own, which are to a large extent modelled on the English example."

Mr. Shadwell gives his own opinion in regard to our technical schools:—"So far as the higher education of working men is concerned, they are better schools and far better attended than the corresponding ones in Germany or America." At Blackburn he found sixty lads out of seventy in the pattern-making class who were working boys and sons of working men, and these boys were at work at 6 a.m. daily in the mills. "The same thing may be seen at Bolton, Oldham, Bradford, Sheffield, and elsewhere. You cannot see it in Germany or America. Our schools have far more working-class students than theirs, and the teaching is excellent. A lad trained at Bradford has been appointed teacher at Roubaix. The most skilled men, beside a host of foremen and managers, in American factories are British."

In the final sentence of this letter, however, there is something to be regretted from the point of view of a desire for perfection in craftsmen, for Mr. Shadwell says: "From the workman's point of view the object of higher education, technical or other, is *not to make good workmen but to help them to be something else.* I have only met one answer on this head. The schools are '*stepping-stones* out of the mill.'"

If, as seems most likely, ceasing to be craftsmen their skill is no longer utilised in a higher position, it is matter for regret. I am afraid the excellence in design that is developed in the manufacturing towns, evidence of which is shown in the exhibitions of work at South Kensington Museum referred to in the previous notes, is not universal, though a few may be picked out for special excellence.

London University on 7th October began its new departure of day classes for the better training of students by Professor Simpson's lecture on the Evolution of Architecture. If parents and employers give the scheme full support, it must be of the greatest benefit to earnest students, and prevent that unfortunate condition of some of the latter which is described by Murger in the lines:

Just as a gipsy wanderer
  Roams at his own sweet will,
So I on the highway of Art
  Am *aimlessly* wandering still.

RIGHTS AS TO SEWAGE.[*]

By Algernon Barker, Barrister-at-Law (Newcastle-on-Tyne).

Journal, Vol. VIII. (1901), 8th June, p. 369; 27th July, p. 442; 31st August, p. 469.

ADDENDA AND CORRIGENDA.[†]

Journal, 8th June 1901.

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1.[‡] Col. i., end of 3rd par., after "(*b*)" *add*: "Your rain-pipe, as well as your foul drain, can empty into the sewer. *Hammersmith* v. *Ainsworth*, 62 J.P. 103."

2. Col. i., after footnote *add*: "These lectures are not intended to be simple summaries of the law, but deal with most of the difficulties which may arise. For this reason they raise numerous points not covered by legal decisions, but which crop up at every turn. Such points not being covered by decisions, I have found it necessary to give the reasons for my opinions, so that the legal adviser may judge of their value."

3. Col. ii., after end of par. headed "**Sea and Tidal River**" *add*: "See Addenda of 1901, on p. 475, as to this page and the last addendum (on River and Sea Fisheries) on p. 476."

4. Col. ii., in middle of par. on Sewage Watercourse, after ". . . Prevention Act of its sting" *add*: "In any case river pollution is not legally criminal. *Derbyshire C.C.* v. *Derby*, 60 J.P. 854; 63 J.P. 195, 701. Private owners (even of artificial streams—see *Roberts* v. *Richards*, 51 L J., Ch. 297; *Wood* v. *Waud*; *Rameshur* v. *Koonj*, 4 Ap. C. 121) might object and sue you for nuisance (*see* 'Duties as to Drains')."

5. Col. ii., put commas after "**Field**" and "**Ditch**" in heading to the last par.

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6. Col. i., 3rd par. (which begins "whithersoever") after "(*f*)" *add*: "*A. G.* v. *Kingston*, 34 L.J., Ch. 481; 12 L.T. 665; 11 Jur. [N.S.] 596, and see Nuisances in lecture on 'Duties as to Drains,' September and October 1902. If you have a cesspool take care that its overflow does not violate P.H.A., 1875, section 47 (3). I suppose you pump or dip sewage out of it for manuring purposes."

7. Col. i., before par. headed "**Home Sewers**" insert a paragraph thus: "**Private Sewers.** Then, again, there may be private sewers belonging, not to an authority, but to some other person. Instance a pipe to a sewage farm. If the owner gives you a license to use one, well and good. If not, you may still do so under sections 23 and/or 25, if *your own* authority are 'entitled to use' it, and if also your site is within 100 feet of it, for by these sections (*if applying to your case*, as to which *see* lecture on 'Duties as to Drains') you must, and therefore can, empty into it. (Contra *Ballard*, 54 J.P. 135).

"In such a case I cannot see that you are bound by any rules, except to act reasonably, to observe the conditions imposed upon the authority under whom you claim the right, and to obey sections 23 and/or 25."

If a sewer belonging to the authority is also within the 100 feet, you may not be able to use the private sewer, *malgré* owner, since you need not (*see* "Duties as to Drains").

As to property intervening between you and this sewer. You could not overbear the owners (other than the local authority), as the sewer would not be an "available sewer." (*See* lecture "Duties as to Drains" (and note) as to 100-foot rule, "Destination." Also see *Wallen* v. *Lister*, 1894, 1 Q.B. 312. Also defence (4), par. 121, lecture on "Duties as to Drains."

Note that if you are under sections 23 or 25 (*see* "Duties as to Drains") you may be ordered to empty elsewhere than into a sewer.

8. Col. ii., in par. 2 (middle) for "severing" *read* "dividing."

9. Col. ii., in last par. *Croft* v. *Rickmansworth* = 39 Ch. D. 272, and in the same par., continued on p. 372, *Jones* v. *Conway* = 1893, 3 Ch. 603, and refer to Max. 238 *a*.

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Col. i., and at end of par., before "so much for the article" *add*: "Even if such drains are not under the definition (section 4), they may still be under section 21, as definition clauses are not exhaustive. Lumley does not deny this."

10. Col. i., in last par., after "to all persons interested" (i) *add*: "Max. 125 *b*."

11. Col. ii., 3rd par. should read: "Sewers fall into three classes—(clean) water sewers, slop-water sewers, and fæcal sewers."

12. Col. ii., 4th par. (headed "**Water Sewer**"), after "curtilage question" *add*: "dealt with later."

13. Col. ii., same par., after "supposititious case" *add*: "of a sewer to irrigate land."

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[*] See also "Duties as to Drains," in the August, September, and October numbers, 1902.

[†] *Note.*—Max. = Maxwell's *Interpretation of Statutes*, latest edition.
Fitz. = Fitzgerald.
P.H.A. = *Public Health Act of* 1875, and, when a section is quoted without naming the statute, imply P.H.A.

[‡] See the last par., p. 556, col. ii., as to purpose of these numbers.

14. Col. ii., same par., *add* these references to all cases: *Ferrand* v. *Hallas*, 1893, 2 Q.B. 135; *Russell* v. *Knight*, 16 M.C.C. 249; *Times*, 9th May 1894; *Durrant* v. *Branksome*, 1897, 2 Ch. 291; *Croysdale* v. *Sunbury*, 1898, 2 Ch. 515; *Kinson* v. *Poole*, 1899, 2 Q.B. 41; *Sykes* v. *Sowerby*, 1900, 1 Q.B. 589.

15. Col. ii., same par. (middle), after "beneath from floods" *add*: "Held that such drains, if sewers, were own profit sewers, because they were clean *and also* made by private individuals (*see* pp. 589, 592, and 595 of the last-mentioned case)."

16. Col. ii., same par. (7th line from bottom of par.), after "*Durrant* v. *Branksome*, 1897" *add*: "2 Ch. *see* p. 301, line 25."

17. Col. ii., same par., after "genuine sewage" *add*: "Horse-droppings not considered, *ibid.* 297)."

18. Col. ii., same par., at end, as to water sewers, *add*: "Of course such sewers if made by the local authority—*e.g.* to drain their parks—are sewers, and also are vested in them; but on grounds of convenience neither slops nor fæcal sewage. nor even rain-water can be drained into these (see *addendum* 73 to note (b))."

19. Col. ii., last par., headed "**Sanitary Sewer,**" *delete* as far as "no distinction" on the next page, and instead *read*: "**'Slop-sewers and Fæcal Sewers**" (*see* (b) as revised). We now come to two subdivisions of foul sewers. Into a slop-sewer you can pour slops, and into a fæcal sewer you can pour fæces. This is the sole distinction between them. A sewer only occasionally fouled with slops is a clean sewer, and only occasional fæcal pollution would not turn a clean or a slop-sewer into a fæcal sewer (*Brown* v. *Dunstable*, 1899, 2 Ch. 578; *Durrant* v. *Branksome*, 1897, 2 Ch. 291, at p. 297 as to horse-droppings.

Mark this, however, that even if the slops or fæces, as the case may be, come from one set of premises only, and if, at the same time, some drainage (including in that term roof-water, but not field or garden water) comes from another set of premises, then the conduit is a foul sewer (slop or fæcal, as the case may be). *Holland* v. *Lazarus*, 66 L.J. Q.B. 285.

But there must be foulness from one source at least, or the double roof-water conduit, if not made or bought by the authority, would be an "own profit" sewer, and therefore not vest in them, for no one can pretend that these gutters are made for "sanitary or ordinary sewage purposes." (These words are used in *Sykes* v. *Sowerby*, q.v. 1900. 1 Q.B. p. 590, ll. 6 and 7; p. 591, l. 19: p. 592, par. 2). If this is not true, then the owner could force the authority to repair his gutters, because he allowed his neighbour to draw roof-water on to them! Double roof-water sewers, then, do not vest in the authority.

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20. Col. i., line 20, after "sewer" at the end of the par. which begins "As to its source" *add*: "In my lecture on 'Duties as to Drains,' 'House, Part of, or not,' I deal with the question as to whether premises are one or many; but it must be remembered (*see* that lecture, 30th August 1902, p. 473, col. i., middle), that, on the authority of *Hedley* v. *Webb*, 1901, 2 Ch. 127, we are bound to hold that though premises may be two *houses*, they may be one building; and so might a structure which was occupied by one or more families, whether in flats or not. The judge was dealing with the meaning of the word 'sewer,' so that the case is well in point in that respect. He distinguishes *Kershaw* v. *Taylor*. An earlier case, *Grant* v. *Langston*, 1900, A.C., 383, seems to make the same distinction between one building and one house. Burglary cases are not in point as to the question now discussed.

"The great object is to see on what principle the Courts would hold buildings and premises to be one or many. According to Lumley the purpose of the P.H.A. in vesting double sewage conduits was, where there was a conduit which was fouled by two householders, to obviate the disputes as to who should clean and repair, and the consequent neglect, since 'anybody's business is nobody's business,' and so they vested it in a third party—viz. the authority. I grant that the decision in *Hedley* v. *Webb* is dead against such a principle, but I may rely on the Arcade case (*St. Martin's* v. *Bird*, 1895, 1 Q.B. 428), and therefore venture to treat *Hedley* v. *Webb* as only to be applied to a set of circumstances analogous to it in every detail.

"As to the whole matter see 'House, Part of, or not,' 30th August 1902, lecture as to 'Duties as to Drains' except 'Division by Floors,' which does not apply (*especially see* note (*h*) *ibid.*, remembering *Hedley* v. *Webb*)."

21. Col. i., 3rd par. from bottom, after "division between" *add*: "See lecture as to 'Duties as to Drains,' note (*g*). p. 475."

22. Col. i., last par., *Doe* v. *Collins* is 3 T.R. 498.

23. Col. ii., line 8, after "*East*" *add*: "Vol. ii., Ch. 15, section 10, and *see* Glen on the London Building Act, 1894, ed. 1895, p. 67."

24. Col. ii., par. 2, beginning, after "Lands Clauses Acts" *add*: "All the relevant cases on the subject, with diagram, are given in lecture on 'Duties as to Drains.'"

25. Col. ii., four lines further down, after "buy up part of a house" *add*: "N.B. Cases under Michelangelo Taylor's Act are not much use, e.g. *Gordon* v. *St. M.A.K.*, 1894, 2 Q.B. 742, 750; *Gibbon* v. *Paddington*, 1900, 2 Ch. 794."

26. Col. ii., after "Marson's case" *add*: "6 Eq. 51."

27. Col. ii., after "Lord Grosvenor's case" *add*: "26 L.J. Ch. 731."

28. Col. ii., after "Steele's case" *add*: "*Steele* v. *M.R.*, L.R. 1 Ch. 275."

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29. Col. i., line 2. after "licence" *add*: "*Asquith* v. *Griffin*, 48 J.P. 724."

30. Col. i., at end of same par. *add*: "*See also* a case on Improvements rates (*Hole* v. *Milton*, 31 J.P. 804), described fully in lecture on 'Duties as to Drains,' note (*k*). 30th August 1902, p. 476."

31. Col. i., next par., at beginning, after "Pilbrow" *add*: "*Pilbrow* v. *St. Leonard's, Shoreditch*, 1895, 1 Q.B. 33."

32. Col. i., next par., at beginning, after "St. Martin's" *add*: "*St. Martin* v. *Bird*, 1895, 1 Q.B. 13, 428."

33. Col. ii., last par. but two, end, after "two or one" *add*: "Refer to lecture on 'Duties as to Drains,' 'House Part of, or not,' and notes (*g*) and (*h*) thereon."

34. Col. ii., last par. but one, beginning, after "ring fence" *add*: "(*see* 'Duties as to Drains,' (*h*), (α))."

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35. Col. i., at top of page, after "large" *add*: "*See Hole* v. *Milton*. Lecture on 'Duties as to Drains,' note (*k*)."

36. Col. i., at end of 3rd par., as to "private communication," *add*: "but *see Hedley* v. *Webb* and 'Duties as to Drains,' (*h*, β)."

37. Col. i., next par., after "the necessity" *add*: "(*see* 'Duties as to Drains,' (*h*), (γ)."

38. Col. i, same par., after "*Doe* v. *Collins*" *add*: "3 T.R. 498. As to value of conveyancing cases as to meaning of 'sewer,' *see* the Shoreditch case as quoted above."

39. Col. ii., last par. but one, middle, after "Harvie's case" *add*: "*Harvie* v. *S.D.R.*, 32 L.T. 1."

40. Col. ii., last par. but one, middle, after "Greenwich Railway Case" *add*: "*R.* v. *L. & G.R.*, 2 G. & D. 447."

41. Col. ii., last par. but one, middle, after "private communication" *add*: "(but *see Hedley* v. *Webb* where applicable)."

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42. Col. i., line 6, after "Arcade" *add*: "(but *see Hedley* v. *Webb* as to semi-detached villas)."

43. Col. i., end of par., *add*: "Nor will a description in a conveyance unite or sever. *Kerford* v. *Seacombe*, 57 L.J. Ch. 270, at 275, middle."

44. Col. i., middle of column, after "hands across the sea" *add*: "*See Sparrow* v. *Oxford*, 21 L.J. Ch. 731. 'Duties as to Drains,' note (*g*)."

45. Col. i., six lines below, after "enough to unite them" *add*: "Contra, perhaps, *see* voting cases (but distinguishable), e.g. *Boon* v. *Howard*, and *see* 'Duties as to Drains,' note (*i*)."

46. Col. i., end of same par., after "My pipe becomes a sewer" *add* a new paragraph as set out at top, p. 476 of Addendum for 1901, and then *add* a new paragraph: "As to a drain from sewage works, *see Tottenham* case, 78 L.T. N.S. 470."

47. Col. i., bottom line, after "Cowes" *add*: "1892, 3 Ch. 18."

48. Col. ii., line 2, after "several" *add*: "of Meader's."

49. Col. ii., line 3, after "passed" *add*: "still."

50. Col. ii., end of par., after "Norwich" *add*: "27 L.J. Ch. 742."

51. Col. ii., 12 lines from bottom, after "Wheatcroft's case" *add*: "52 L.T. 356."

52. Col. ii., 4 lines below, after "Sutton's case" *add*: "27 L.J. Ch. 742."

53. Col. ii., 4 lines below, after "Ainley" *add*: "1892, 2 Q.B. 274."

54. Col. ii., 2 lines lower, after "Fordam's case" *add*: "1894, 2 Q.B. 780."

55. Col. ii., next line, after "local case" *add*: "(*Newcastle-on-Tyne* v. *Houseman*, 63 J.P. 85)."

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56. Col. i., 5 lines from bottom, after "make it one" *add*: "*L.N.W.R.C.* v. *Runcorn*, *ubi supra*, but *see* note (*b*). They must intend it to be a slop or fæcal sewer, if slops and fæces respectively are to be allowed to foul it."

57. Col. i., 3 lines from bottom, after "Uttley" *add*: "1894, 1 Q.B. 233."

58. Col. i., 2 lines from bottom, after "does not matter" *add*: "Even if the sewer is under our drawing-room, it will belong to the local authority. A sewer in private land would often be found where a neighbour has an easement for drainage. Again, even if the sewer consists only of the drainage of two detached cottages in the heart of a lonely moor, it will vest in their authority."

59. Col. ii., top of page after "blessed by sanction," *delete* "No . . . his sewage into it," and instead *read*: "Well, even though section 21 was contravened and the authority were unaware of the sewerisation, the thing would be a sewer and vest so far as an innocent person (not claiming under the infringer) or the authority was concerned, *Lazarus* v. *Holland*, 1900, 66 L.J., Q.B. at p. 286; *R.* v. *St. Matthews*, B.G., 1896, 2 Q.B. 319; *L. N. W. R. Co.* v. *Runcorn*, 1898, 1 Ch. p. 44, bottom, *obiter*; *Kershaw* v. *Taylor*, 1895, 2 Q.B. 473; *Geen* v. *Newington*, 1898, 2 Q.B. 1 (don't confuse the other question in this last case as to sanction for combined drainage with the question of illegality. The fifth drain in that case only affects us); *Bateman* v. *Poplar*, 1887, 37 Ch. D. 272, is overruled so far as it contradicts this. But the first wrongdoer, and all persons claiming under him, except perhaps innocent purchasers, would be 'estopped,' *i.e.* prevented from pleading that he had sewerised it—*Florence* v. *Paddington* (1895, 12 T.L.R., 30)—since he had done so without the local authority's sanction. So if in a court of law he was the person who desired to dub it a vested sewer, his mouth would be stopped."

60. Col. ii., line 7, after (*r*), *delete* "even so far . . . second house," and instead *read*: ". So far as to the authority's sanction, but what as to private owners? Can their drain be sewerised without their consent? *The trespasser* cannot plead that it is a sewer unless he can get a subsequent assent or tacit acquiescence from the owner of the drain. *Hedley* v. *Webb*, 1901, 2 Ch. 126; *Meader* v. *West Cowes*, 1892, 3 Ch. 18. When, however, this is given, the drain immediately vests, provided that double sewage runs for a while after the consent. But a person not claiming under the trespasser, and also an authority, can affirm conduits which were sewerised by trespass to be sewers. In both cases it is a question of estoppel, *i.e.* of truths a man is forbidden to plead."

61. Col. ii., 2nd par., near end, after "two premises" *add*: "or by one, if another passes rain-water from the roof."

62. Col. ii., 3rd par., end, after "house sewage" *add*: "nor can you turn fæces into a slop-drain. Sewer includes the whole apparatus, *Poplar* v. *K.*, 28 L.J., M.C. 37, but not *for section* 16, a pumping station, *King's College* v. *Uxbridge*, 85 L.T. 303."

Next par., middle, after "vest" *add*: "(*see* Max. 435 d, 'vest')."

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63. Col. i., top, after "Bonella's" *add*: "18 Q.B.D. 383."

64. Col. i., after "Acton Local Board," *add*: "28 Ch. D. 283; and *Pinnock* v. *Waterworth*, 3 T.L.R. 563."

65. Col. i., 2nd par., top, after "Hallas" *add*: "1893, 2 Q.B. 135."

66. Col. i., 2nd par., end, after "Act" *add*: "(Max. 283 b)."

67. Col. i., two lines lower, after "Vowles' case" *add*: "64 L.J., Ch. 414."

68. Col. i., bottom of page, after "clean water sewers" *add*: "already spoken of. (See *Kinson* v. *Poole*, and *Sykes* v. *Sowerby*, and my comment under 'Water Sewer,' *ante*, p. 372, and addendum of 1902 thereto.)"

69. Col. i., after the same word, *delete* from "and these when made by" to "them under section 21" at end of par. 1 of col. ii.

70. Col. i., next par., near end, after "empty your drains" *add*: "(*Kinson's* case)."

71. Col. i., at end of same par., after "*Branksome*, 1897" *add*: "2 Ch. 291. They are here treated as clean (horse-droppings not being considered, *ibid.* 297), and section 16 is said to apply to them (*ibid.* p. 301, line 25), but section 21 does not (*Kinson's* case)."

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72. Col. i., line 9, after "part 3" *add*: "also, for purposes of getting rid of fæcal drainage, all mere slop-sewers."

73. Col. i., note (*b*), *add*: "Since the words in the text and note were written, the case of *Graham* v. *Wroughton*, 1901, 2 Ch. 451, has decided (Div. Court) that a slop-sewer and a fæcal sewer are two different things. The Court of Appeal did not upset this decision. The case rests on *Kinson* v. *Poole*, 1899, 2 Q.B. 41; in which, on similar grounds of convenience, it was held that people cannot drain fæcal sewage or even roof-water into an authority's road drain. It is a mistake to say that these latter are not under Part III. of the Act, and to give this as the ground of the decision in *Kinson's* case. I grant that road drains are clean sewers (in spite of horse-droppings, *Durrant* v. *Branksome*, 1897, 2 Ch. 291); but it is only *private* clean drains which are taken out of Part III., for they alone can be 'own profit' (*Sykes* v. *Sowerby*, 1900, 1 Q.B. 585 at pp. 589, 592, 595), and so come within the exception to section 13. Thus, *e.g.* in *Durrant* v. *Branksome* (301, line 25), we find that they were under section 16 (otherwise why should a surveyor's report have been needed? *See* the case). The result, then, is that *Kinson's* case can have decided them to have vested on no ground but convenience, and therefore was precedent for considering convenience in *Graham* v. *Wroughton*. This last case, however, goes much further, and one finds it hard to reconcile it with *Molloy* v. *Gray*, 24 L.R. Ir. 258, where the right of a householder to empty fæcal sewage into what had been previously only a slop-sewer was passionately vindicated."

74. Col. i., same note, after "manufactories" *read*: "but see line ii. on p. 452, 27th July 1901, a note, &c."

75. Col. i., end of note, *add*: "Fitz. 9 R.P.P.A."

76. Col. i., as to note (*d*). The addendum 1901 to this (*q.v.*) has itself been revised.

77. Col. i., end of note (*e*) (revised by addenda of 1901), after "dry ditch" *add*: "Nor is custom a defence, *A. G.* v. *Richmond*, L.R. 2 Eq. 306"; and after inserting from the addendum of 1901, finish the note with a reference to "*R.* v. *Oxfordshire*, 1 B. & Ad."

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78. Col. i., end of note (*i*), *add*: "Right to inspect *usually* implies right to take copy. Max. 495 b."

79. Col. i., note (*k*), after "Harvie's case" *add*: "fully set out in lecture on 'Duties as to Drains,' p. 473, col. i., 30th August 1902; but note *Hedley* v. *Webb*."

80. Col. i., note (*m*), *add*: "see p. 475, col. ii., of lecture on 'Duties as to Drains,' 30th August 1902 and *ibid.* note (*h*) γ."

81. Col. i., note (*o*), after the insertion from 1901 addendum, *add*: "Refer to *Nunn* v. *Denton*, 14 L.J. C.P. 42, where *agent's* servant slept there. In *Chapman* v. *R. B. S.* (7 Q.B.D. 185, line 21), the clerk lived next door to bank rent free, but there was separate access and no private communication."

82. Col. i., note (*p*), for "must be an authorised" *read*: "must not be a trespassing."

83. Col. i., after "destination" *delete* "such a doctrine . . . analogous case."

84. Col. i., after "(*see* note *r*)" *add*: "and see the text, p. 377, as to legality tests. The acquiescence of the owner at the trial would have put Meader in the right from the date of such acquiescence," and *delete* the "however" which follows.

85. Col. ii., note (*r*), *delete* whole note.

86. Col. ii., note (*s*), 2nd line of note after "sewer" and before "but an urban authority, *insert*: "If they wrongly make you pay you can recover. *Ellis* v. *Bromley*, 53 J.P. 711, and see 'Duties as to Drains,' par. 122. There are four exceptions, *i.e.* where (i) insufficient drains under the proviso to section 23 (*see* 'Duties as to Drains,' par. 100); (ii) new streets; (iii) special drainage district, *Bates* v. *Plumstead*, 64 L.J. M.C. 127; *Newcastle* v. *Houseman*, 63 J.P. 85; and *see* section 224 P.H.A.; (iv) Adoptive Statute. As to (ii)."

87. Col. ii., same note, before "under section 277" *insert*: "(iii)"; before "also by adopting" *insert*: "(iv)."

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88. Col. i. and Col. ii., after "**Notice**" at head of par. *delete* rest of par. and read as follows:

"This is what will happen. The builder tells the authority that he intends to break into the sewer. Well, if they delay replying, he may after a reasonable pause proceed to do so, since they have 'stood by.' (*See* 'Duties as to Drains,' 'Exercise of Discretion,' 'Punctuality' note (*o*) to that lecture.)

"Suppose, however, that the answer comes promptly, but tries to delay him in another way by saying that he shall not do so until a specified time (unconscionably long) has elapsed. Does the above doctrine as to unconscionable delay apply? Again, does the doctrine which requires a by-law to be reasonable *à fortiori* say that an unconfirmed, unsifted special requirement as to notice must be reasonable, or are we rather to look to the analogy of other cases which show that a discretion to give special orders (*e.g.* as to size of drains under section 23) cannot be reviewed simply because it is harshly or absurdly exercised? No; I think the doctrine as to unconscionable delay is hardly in point, for there can be no 'standing by,' since the builder knows from the first what the Council requires. So the doctrine as to reasonableness of by-laws stands on its own historical basis and is inapplicable. (See Comyn Digest 'By-law.') In my opinion, therefore, if the authority specify honestly, though harshly and stupidly, an unduly long notice the builder must wait the undue length of time.

"Now suppose that the Council try a third method of delay—*i.e.* after having punctually specified a notice (whether reasonable or not) they fail to send their agent and give their orders before the time specified in the notice has elapsed. In such a case the builder can at once break into the sewer, obeying only his sense of what is reasonable and any knowledge he has of what the Council requires, for he has the right to presume that there are no further orders.

"The case of *Graham* v. *Wroughton*, 1901, 2 Ch. 451, however, shows that the builder must tell the authority that he intends to break into their sewer.

"That case also (arguing by analogy from *ibid.* p. 454, l. 23, &c., shows that when he first pours sewage down a conduit which has previously passed only rain-water he must give notice, wait for orders, and behave generally as if he were actually breaking into a sewer. He must also get the consent of the owners of the clean sewer.

"As to emptying fæces through a conduit which has previously passed only slops the same rule applies (*ibid.*)."

89. Col. ii., after heading ". . . **Orders**" *add*: "*see* subsection as to discretions in Part II., September 1902, of lecture 'Duties as to Drains.' You need not consider whether the sewer is of sufficient size" (I gather this from the contrast to section 61 of the London Sewers Act, 1848).

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90. Col. i., 1st par., at end *add*: "No appeal to Quarter Sessions. (1862. *Elsdon ex p.* L.R. 9 Q.B.D. 41.)"

91. Col. i., 2nd par., after Council parks *add*: "57 J.P. 741. *See* perhaps also *Calder Navign. Co.* v. *Pilling*, 14 L.J. Ex. 228, Max. 418 a; *Calder* v. *Hebble; Wandsworth*, 8 T.L.R. 279 (contra perhaps *Slattery* v. *Naylor*, 13 Ap. C. 450, but this principle is certain)."

92. Col. i., next par., after "*Cooper* v. *Wandsworth*" *add*: "32 L.J., C.P. 185; 14 C.B. [N.S.] 180, 8 L.T. 278; *Hopkins* v. *Smethwick*, 1890, 59 L.J. Q.B. 250; 54 J.P. 692; 62 L.T. 783."

93. Col. i., after "*A.G.* v. *Hooper*" *add*: "1893, 3 Ch. 483."

94. Col. i., next sentence before "within six months" *delete* "and expenses."

95. Col. i., after "barred" *delete* "but by declaring . . . twelve years," and *read*: "As regards expenses the Council has two remedies immediately the works are done, viz. (i) a personal remedy by summary jurisdiction, or in the County Court, which must be exercised in six months, and (ii) an immediate charge upon the premises exercisable within 12 years (*Hornsey* v. *Monarch*, 24 Q B.D. 1). Such a charge is not registrable as a 'land charge' (*R.* v. *Vice-Reg.* ibid. 178) and has no priority to restrictive covenants (*Tendring* v. *Dowton*, 91 3 Ch. 265). *See* section 257 P.H.A. and Chitty's Statutes and Lumley *in loco*. They cannot declare the expenses to be private improvement expenses or levy an improvement rate under section 213 (*see* Lumley). Justices cannot try the reasonableness of the expenses (*Debenham*, 6 Q.B.D. 112). The case of *Tottenham L.B.* v. *Rowell*, 15 Ch. D. 378, may be referred to, but be it remembered that *there* the expenses *could* be declared private improvement expenses. Also (iii) if the illegal connection has damaged the sewer, there will be compensation to pay and the authority could obtain an injunction against future damage."

96. Col. i., three lines lower, after "prescriptive right" *add*: "Otherwise there is no limitation, properly so called, against this power (*Bermondsey* v. *Johnson*, L.R. 8 C.P. 44)."

97. Col. ii., line 14, after "Council's sewers" *add*: "It is not clear whether in *Holland* v. *Lazarus* the nuisance was in the drain or sewer portion of the conduit. Probably it was round the rain-pipe, *i.e.* at the junction of these two portions."

98. Col. i., end of same par., after "(*c*)" *add*: "Implied, Max. 507 (*c*). *See* Max. 582 as to private damages. As to *breaking up streets* the following cases might be of use: *Edgware* v. *Harrow*, L.R. 10 Q.B. 92; *Hawkins* v. *Robinson*, 37 J.P. 662; *R. Longton*, 2 E. & E. 651; 29 L.J. M.C. 118 (this last case cannot be taken to contradict the doctrine I have laid down in note (*g*), p. 452); *Thompson* v. *Sunderland*, L.R. 3 Ex. D. 429; *Rolls* v. *St. George*, 14 Ch. D. 788."

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99. Col. i., after heading "**How to Produce a Sewer**" *add*: "Here the distinction between slop and fæcal sewers does not apply. (*Durrant* v. *Branksome* in the 1902 addendum to note (*b*), 8 June 1901, and *see* **Water Sewers** and **Slop and Fæcal Sewers**" (this last is the heading substituted for 'Sanitary Sewers' by these addenda) same issue, p. 372, col. ii.) A pumping station is not a sewer under section 16, *King's Coll.* v. *Uxbridge*, but otherwise the whole apparatus is included. *Poplar* v. *K.* (both *ubi supra*)."

100. Col i., line 4 of same par., after "premises" *add*: "Or rather the drainage from one set of premises, provided that one fount supplies roof-water *or* sewage and the other supplies sewage (*see* the second and third pars. of

my addendum to '**Slop Sewers and Fæcal Sewers**,' p. 372). My expression 'double sewage' includes the cases thus described."

101. Col. ii., line 6, after "then" *add*: "(provided some sewage flows)."

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102. Col. i., line 5, "desires to drain," *add*: "his sink, w.c., or even his roof."

103. Col. i., end of same par., after "property" *add*: "So also, if our drain carried only our roof-water and Jones wished to foul it."

104. Col. i., line 10 of next par., after "together with Jones'" *add*: "sewage or roof-water."

105. Col. i., end of same par., after "p. 380" *add*: "*See* Digest of English Case Law, vol. x. Poor Law 1139, &c."

106. Col. ii., line 6, after "eatage" *add*: "*See Nunn* v. *Denton*, 14 L.J. C.P. at p. 45, col. i., middle per., Maule, J."

107. Col. ii., end of same par., after "running sewage" *add*: "or sewage and roof-water respectively."

108. Col. ii., next par., line 5, after Councils *delete*: "the powers over" and *read*: "power to carry both" and after "byre" *delete* "as well as over" and read "and."

next par., line 5, after "never" *add*: "until quite abandoned as a conduit for drainage."

109. Col. ii., next lines after "St. Leonard's Vestry" *add*: "1896, 1 Q.B. 533."

110. Col. ii., six lines lower, after "one house" *add*: "(This would not make it a 'new building' under section 159, as the opposite process would; nor can I see any way in which it would bring the owner under the P.H.A.A.A., 1890, section 23, subsection 4, even if such Act adopted)."

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111. Col. ii., two-thirds down, *take out*: "But then . . . improperly . . . helpless" and *insert* it after: "Prevention . . . cure" at end of par.

112. Col. ii., last par., after "section 15" *add*: "*see* (*l*) i."

113. Col. ii., next line after "surveyor should" *add*: "though he cannot be forced to."

114. Col. ii., two lines lower, after "landowner" *add*: "(See *Galloway* v. *Lord Mayor of London*, L.R. 1, H.L. 34, as to not using compulsory powers for collateral purposes)."

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115. Col. i., after "13" *add*: "And the surveyor need not distinctly define the route on maps or plans. *Lewis* v. *Weston-s.-M.*, 40 Ch. D. at p. 62."

116. Col. i., top of next par., after "*Mare*" *add*: "(40 Ch. D. 55, and see *Galloway's* case, *ubi supra*, as to 'necessity')."

117. Col. ii., 2nd par., end, after "acting surveyor" *add*: "(as to disputing his title see *Smith* v. *Hirst*, 23 L.T. [N.S.] 605)."

118. Col. ii., middle of 4th par., after "Amphlett, B. 335" *add*: "Max. 130–400."

119. Col. ii., end of same par., after "vaults (*m*)" *add*: "The local authority need not *take* land (of course) *Roderick* v. *Aston*, 5 Ch. D. 328; *Nth. London R.C.* v. *M.B.W.*, 28 L.J. Ch. 909 (on Metropolis M. Act)."

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120. Col. i., middle after "shall go" *add*: "*Derby* v. *Bury*, L.R. 4 Ex. 228 on section 68 of Local Government Act, 1862."

121. Col. i., bottom, after "must purchase it" *add*: "*Metrop. B.W.* v. *M.R. Co.*, 4 C.P. 192, but *see* Max. 505 c."

122. Col. i., last line, after "land" *add*: "*Roderick* v. *Aston*."

123. Col. ii., top line, after "referred to" *add*: "(And *see re C. Dudley*, 8 Q.B.D. 86)."

124. Col. ii., next par., after "16," at end of line, *add*: "see *Lamacraft* v. *St. Thomas*, 42 L.T. [N.S.] 365."

125. Col. ii., at end of same par. *add*: ("*Lamacraft* v. *St. Thomas*). But not under sections 41, 102, or 119, which relate to nuisances, smoke, and bad victuals."

126. Col. ii., next par., 3rd line, after "War Office" *add*: "Volunteer drill halls are usually vested in the colonel, and therefore not exempt, especially if they are used for other purposes. *C.V.P. St. Margaret's* v. *Hoskins*, 1899, 2 Q.B. 474; *Pearson* v. *Holborn*, 1893, 1 Q.B. 389; *Rayner* v. *Drewitt*, 64 J.P. 567. I may here remark that such buildings are subject to sanitary laws."

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127. Col. i., at end of 2nd par., after "Council's sewer" *add*: "(Max. 186, 188, 189, g; *In re Manor of Lowestoft*, 24 Ch. D. 257. On being acquired by the Crown, property at once becomes sacrosanct, *e.g.* custom-houses, post-offices, prisons, and other national buildings, *if owned by the Crown*. *This* exception does not include War Office or Admiralty property. Property administered by the Attorney-General is not exempted. *See* Inhabited House Duty cases as to '*owner*.'"

128. Col. i., bottom of page, after "Crown" *add*: "unless of course a regular Act is passed, which would mean not compulsion but royal assent."

129. Col. ii., in par. headed "vi. '**Sanction,' when**, line 10, *delete* 'emptying' and *read*: 'knowingly permitting' (*e.g.* Max. 143, 'Suffering gas washings to be conveyed' includes innocent percolations)."

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130. Col. i., *delete* all note (*b*).

131. Col. ii., note (*f*), after "Harvey" *add*: "13 T.L.R. 297."

132. Col. ii., end of note (*f*). *add*: "The latest case *L.N.W.R.* v. *Westminster*, 1902, 1 Ch. at 279, sums up decisions, though it deals with other matters."

133. Col. ii., note (*g*), 3rd line, after "this" *add*: "Max. 401, line 4, 502 b *and* c, 505 b."

134. Col. ii., *ibid.*, 5th line after, "rule" *add*: "Note also P.H.A., section 25, 'shall empty, and maxim

Lex nemo cogit ad impossibilia, and *West Hartlepool*, 1897, W.N. 12 (7), but see last par. but one of addendum to p. 370, col. ii. as to **Private Sewers.**'"

135. Col. ii. *ibid.*, 7 lines from bottom, after "contemplate such cases" *add*: "Similar reasoning, *Blashill* v. *Chambers*, 14 Q.B.D. 487, ll. 24, 25. But see addendum of 31st Aug. 1901, p. 471, col. i., par. 2, no such differentiation under section 22."

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136. Col. i., last line of note (*g*) should *read*: "For information as to access to repair see" &c. (ending as before).

137. Col. ii., note (*n*), middle, after "p. 24" *add*: "*Masters* v. *Pontypool*, L.R. 9 Ch. D. 67."

138. Col. ii., *ibid.*, end, after "p. 23" *add*: "And see in *Richards* v. *Swansea* (9 Ch. D. p. 425, at p. 433), *per* Brett, L.J., who says that 'a man need not tell his adversary exactly on what grounds he is going to bring himself under the Act.' But I think a public body, or even a person clothed with powers on behalf of others, stands in a very different position."

139. Col. ii., note (*r*), *delete* "26" and *read* "25."

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140. Col. i., at head of 1st par., after "Insufficient," *add* a reference to the following: "These remarks do not apply to *uncleansed* sewers. *Baron* v. *Portslade*, 63 J.P. 726, though I deal with such in addendum to middle of page 470. Perhaps *R.* v. *Rochester* and *R.* v. *Worcester*, both in *Times*, 22nd November 1892, may be of value."

141. Col. ii., end of par. 1, after "help," *add*: "The complaint must not contain extraneous matter."

142. Col. ii., next par., middle, after 1899 *add*: "2 Q.B. 41, 49."

143. Col. ii., end of same par., after (*y*) *add*: "The L.G.B. cannot enforce any particular work. *Self* v. *Hove*, 1895, 1 Q.B. 685."

144. Col. ii., end of next par., *add*: "and 12 T.L.R. 536."

145. Col. ii., 4th line from end after (*s*) *add* a new paragraph: "A fifth good method in certain circumstances is indicated in the second par. of the next addendum 146." Then add another new par.

Discretion as to necessity. In *R.* v. *L.C.C.* 64 J.P. 20 (1900) the L.C.C. didn't give drainage because they wanted to prevent the houses being used, and therefore they didn't think the drainage "necessary." *Held*: that they must not say no drainage was necessary for a purpose indicated by Parliament, or that it was an absurd purpose. They have a discretion as to *means*, not as to whether to carry out *end* or not.

146. Col. i., end of 2nd par., after "387" *add*: "And 75 L.T. and 14 T.L.R. 368. *Glossop* v. *Heston*, 12 Ch. D. 102; *Crosby* v. *Newmarket*, 1892, A.C. 345; *Robinson* v. *Workington*, 1877, 1 Q.B. 619; 13 T.L.R. 148; *Jones* v. *Barking*, 15 T.L.R. 92." Then a new paragraph:

"*A fifth good method*, if through the negligence of the local authority in not supplying sufficient sewers your premises are flooded with sewage, may be to take an action for damages. *Stretton* v. *Derby*, 1894, 1 Ch. 431 (but *see* lecture on 'Duties as to Drains,' 'Nuisance,' par. 122, no damages for misfeasances). So you could sue the authority for not *cleansing*. *Baron* v. *Portslade*, 16 T.L.R. 523; and if they illegally compelled you to cleanse their sewer, you could recover damages. *North & Millhouse* v. *Walthamstow*, 15 T.L.R. 6. *See* par. 122 just quoted. As to authority's excuse that they did not know of existence of drain *see* 'Legality Test,' *ante*, Part I. of this lecture (on Rights), p. 377, col. ii., top."

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147. Col. i., par. 2, 3rd line, after "here also" *add*: "Is there under section 22 an implied way at all, and is such a way implied through streets only, or through both streets and roads? There is an implied way, or the section would be voided, and that way is through both streets and roads, or we shall be making an unwarranted distinction, as I will show."

148. Col. i., next line, *delete* "however."

149. Col. i., halfway down par., after "impassable by pipes," *delete* "they," and *read* "the boundaries."

150 Col. ii., four lines lower, after "streets" *add*: "It might be argued that roads were within the purview of section 21 because they were within the purview of section 22, but not, I think, that section 22 did not apply to them because section 21 did not."

151. Col. ii., bottom, after "fount of the sewage" *add*: "As I may call a bath, wash-basin, sink, &c."

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152. Col. i., third line, *delete* "district" and *read* "authority."

153. Col. i., line 10, after "Council" and before "a deadlock" *add*: "As to such agreements, see *St. Mary* v. *Hornsey*, 1900, 1 Ch. 595. They are only licenses."

154. Col. i., 3rd par., 3rd line, after "field" *add* "private sewer."

155. Col. i., *ibid.*, 14th line, after "intervening owners" *delete* "by" and *read*: "If a district is unnecessarily troublesome by."

156. Col. i., two lines lower, after "interference" *add* "by its council."

157. Col. i., next line, after "district" *add*: "A rural district may have its advantages, as section 25 (Penal Method) will not apply (*see* lecture on 'Duties as to Drains'). You may find a small change of site within your district useful in order to alter your legal position as to the 100-foot rule under section 25 and section 23 (insufficient drain in urban or rural district. *See* lecture on 'Duties as to Drains.' This may also enable you to drain into a 'private sewer' (q.v.)."

158. Col. ii., line 11, *delete* "u" and *read* "v."

159. Col. ii., after end of par. 4, after "from this" *add* a new paragraph as follows: "iii. You choose a private sewer. Are the owner *and* intervening owners willing? If so, well and good. If you *must* use it under section 25 or section 23, then you can defy these, but not otherwise. I question whether a sewer which you cannot reach because an objector's *land* intervenes is for you a sewer at all (see *ante*, 'private sewers'), but intervening streets are a different matter. *See* 'no trespass,' *ante*, and notes (*e*), (*f*), and (*g*) of this lecture on Rights. If your council are not 'entitled to use' it, or if there is any other sewer within 100 feet of your site, or if it is not within 100 feet of your site, or if in any way you are not under section 25 or section 23 (see next lecture, 'Duties as to Drains'), then you cannot defy the sewer-owner or the intervening freeholders of streets, &c. If you can use the private sewer, then you are not under section 21 as to notice orders and regulations, since it is not a sewer of the local authority."

160. Col. i., next par, *delete* "iii." and *read* "iv."

161. Col. ii., same par, 5 lines from its end, after "the freehold" and before "(7)," make a new paragraph as A, B, C, D, and E are under head (7).

162. Col. ii., same par, bottom, end, after "double sewage," *add*: "including sewage and roof-water, one from each set of premises respectively."

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163. Col. i., top of column, *write* "(7) continued."

164. Col. i., before the par. headed "(8)" make a gap or mark to show that A to E, *ante*, are under head (7).

165. Col. i., third line from bottom of page, *delete* "(iv.)" and *read* "(v.)."

166. Col. ii., beginning of par., *delete* "(v.)" and *read* "(vi.)."

167. Col. ii., end of same line, for "(iii.)" and "(iv.)" *read* "(iv.)" and "(v.)."

168. Col. ii., par. after next, *delete* "donors of" and *read* "Council which supplies."

169. Col. ii., par. after next, line 2, after "cesspool" *add* "and private sewer" and *delete* the "and" before "cesspool."

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170. Col. i., 9 lines from end of note (*s*), *delete*: "For all this . . . source of danger to the public."

171. Col. i., at end of same note *add* a new par.: "Sufficient sewage generally, but not any particular work can be enforced. *Self* v. *Hore*, 1895, 1 Q.B. 685."

172. Col. i., note (*t*), 5th line, after "danger" *delete* all the rest of note and *read*: "I think the answer (deleted) to the above question is wrong, for it stretches *Molloy* v. *Gray* too far (*see* note (*s*), *ante*), and it also contradicts the law laid down in my note on measurement of distance and the 100-foot rule at the outset of my discussion on 'the argument from hardship.'"

173. Col. ii., 8 lines from bottom, before "interferes" *prefix*: "over carefully." Last line but one, after "consent" *add*: "The exception proves the rule. Analogous reasoning in *Russell*, 13 Ap. C. 425, bottom of par. 1."

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174. Col. ii., note (*y*), 4th line, after "upon them" *add*: "Ex p. *Darlington* v. *Times*, 1870, Nov. 15."

175. Col. ii., note (*y*), end of note, after "Just held" *add*: "The merits not considered by a Court which is asked by an authority to upset L.G.B. if the latter act *intra vires*. *R.* v. *Staines*, 62 L.J., Q.B. 540. The L.G.B. is not a court. Ex p. *Kingstown*, 18 L.R. Ir. 509. If the L.G.B. act partly *ultra* and partly *intra vires*, the good part will, if severable, be severed from the bad and upheld."

Revision of the Addenda of 1901. (Published, pp. 475 and 476. 31st August.)

176. As to Addendum to p. 372, col. i., line 12, *see* that place.

177. As to Addendum to p. 372, col. ii., line 13, *delete* and refer to that place as now revised.

178. As to Addendum to p. 379 as to (*d*), *insert* at beginning: "*Holland* v. *Lazarus* seems to upset this note and to prove that a drain must, in order to be under section 21, be either of sewage from a building or of roof-water (and see *Fitzgerald*, P.H.A., ed. 1895). References (also) contra, *Sykes* v. *Sowerby*, ubi supra, 591, l. 5 (generally). *R.* v. *Manchester Waterworks*, 1 B. and C. 630, as to *ejusdem generis*, to which last case oppose *Bound* v. *Lawrence*, 1892, 1 Q.B. 226, *per* Fry, J. The reference as to nearest antecedent is Gostwick's Grammar 45, as to Coke = Co. Litt. Warranties 385 (*b*) (contra *Court* v. *Buckland*), as to Stroud = Stroud's *Judicial Dictionary* not '*Journal*.' As to 'same' referring to nearest antecedent, *see* Burns, *Justices*, 29th ed., vol. iv., 855*a*, and *R.* v. *Saffron Walden*, 9 Q.B. (= Ad. and El.) 76, quoting Burns."

179. As to Addendum to p. 380, "u." for "u" *read* "v" in both places.

The reader is advised to note all these addenda and those of 1901, or at least to insert the numbers of the addenda (1-175) into their respective places in the text, and to delete where required. It will be advisable to examine the cases since October 1903 for any changes in the law.

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